

INSTALLATION INSTRUCTIONS for

Kenmore

**BUILT-IN VACUUM
CLEANING SYSTEM
SERIES 500**



SEARS, ROEBUCK AND CO.
SIMPSONS-SEARS LIMITED—CANADA

REPAIR PARTS LIST FOR

Kenmore

**BUILT-IN VACUUM
CLEANING SYSTEM**

**MODEL
116.40540**



HOW TO ORDER PARTS

All parts listed herein may be ordered through any Sears, Roebuck and Company, or Simpsons-Sears Limited, Retail or Mail Order Store which serves the territory in which you live. Selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

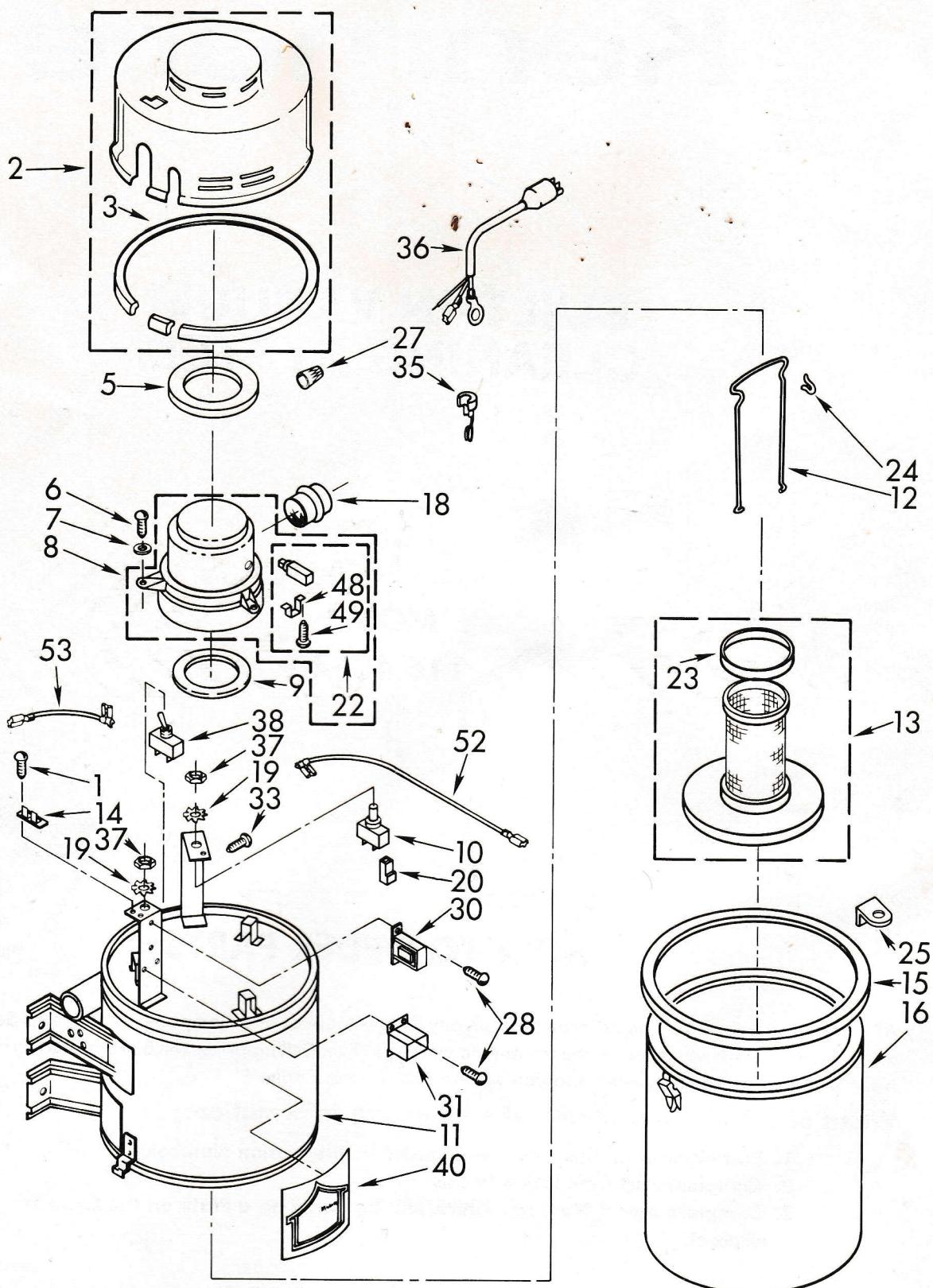
When ordering, always give the following information:

1. Part Number in this list. (Never order by Illustration Number.)
2. Complete Part Description in this list.
3. Complete Model Number, which will be found on a Plate on the Cylinder Wall Bracket.

**SEARS, ROEBUCK AND CO., U.S.A.
SIMPSONS-SEARS LIMITED — CANADA**

VACUUM CLEANER PARTS

For Model: 116.40540



VACUUM CLEANER PARTS

For Model: 116.40540

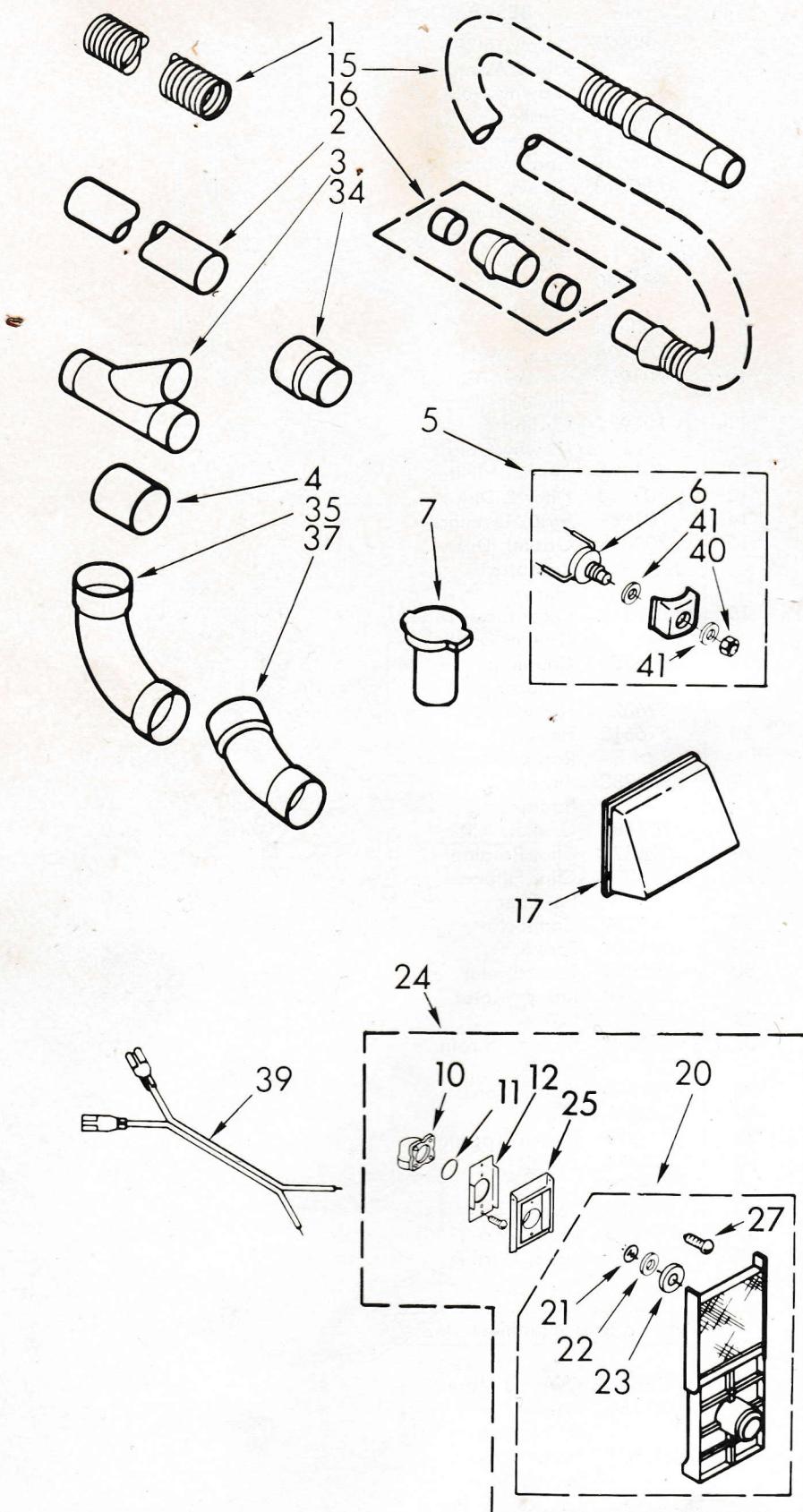
Illus. No.	Part No.	DESCRIPTION
1	680977	Screw, 6-20 x 1/2
2	701960	Hood Assembly (Tawny Gold)
3	701116	Gasket (Long)
	701117	Gasket (Short)
5	616549	Seal, Motor Top
6	680213	Screw, 10-12 x 3/4 Thread Forming Type A
7	681040	Lockwasher, No. 10
8	700333	Motor
9	701425	Seal, Motor
10	701950	Breaker, Circuit (Includes Illus. 37)
11	701972	Cylinder, (Tawny Gold)
12	701101	Retainer, Filter
13	701213	Filter & Disk
14	701961	Strip, Terminal
15	701098	Gasket, Dirt Receptacle (Black)
16	701919	Receptacle, Dirt (Tawny Gold)
18	616556	Coupling, Reducer
19	596022	Lockwasher, 7/16
20	596610	Housing, Receptacle
22	568980	Kit, Brush Replacement
23	701180	Gasket, Filter
24	596521	Clip, Retainer (2)
25	701236	Clip, Filter Retainer
27	596219	Connector
28	681036	Screw
30	701954	Transformer
31	701366	Relay, Motor
33	681275	Screw
35	681276	Bushing Strain Relief
36	701968	Power Cord
37	680027	Nut
38	701979	Switch, Toggle
40	701876	Decal
48	568924	Clamp
49	569358	Screw
52	701956	Lead, Wire (13")
53	701957	Lead, Wire (7")

Following Parts Not Illustrated

- Lit 701984 Owner's Manual
- Lit 701964 Insert,
Installation
- Lit 701867 Instructions,
Installation
- Lit 701981 List, Repair Parts

INSTALLATION PARTS

For Model: 116.40540



Illus. No.	Part No.	DESCRIPTION
1	701868	Tubing, Flexible (9") (2)
	701548	Tubing, Flexible (70")
2	616600	Pipe, Transmission
3	701585	Fitting, Branch (2)
4	616594	Coupling, Slip (5)
5	701613	Switch Assembly
6	723649	Switch
7	701264	Valve, Utility
10	616573	Elbow
11	616575	Ring, "O" (3)
12	701006	Bracket, Mounting (3)
15	701517	Hose, Extension
16	569386	Kit, Hose Coupling Repair
17	701113	Muffler, Exhaust
20	701836	Wall Valve Assembly (3)
21	616565	Fastener, Push-On
22	701003	Washer
23	616564	Seal
24	702049	Kit, Wall Valve
25	701004	Bracket, Exterior (3)
27	680835	Screw
34	616556	Coupling
35	701190	Fitting, 90° Ell
37	701192	Fitting, 45° Ell
39	701575	Wire, Connector
40	680027	Nut
41	680340	Washer (2)

Following Parts Not Illustrated

- 701695 Pliobond Tube
- 616174 Tape, Plastic (1" x 400")

INSTALLATION INSTRUCTIONS-ASSEMBLY NO. 42020

INSTALLATION OF WALL VALVE ASSEMBLY IN EXISTING CONSTRUCTION-STUD WALL

1. Determine accessible location for each wall valve assembly required for complete coverage of all cleaning areas. Height is optional, but 16" - 24" from floor is recommended.

CAUTION: When selecting valve locations, be sure they do not interfere with existing electrical or mechanical installations.
2. A probe drill can be helpful to determine plate locations. See Figure 2 for a suggested method. (NOTE: A length of stiff wire from a coat hanger can be used in place of a drill bit.)
3. Access hole for tubing should be between studs and located front to back (as shown) in the plate to align with the exhaust or belled end of the 90° elbow of the valve assembly. (See Figure 3)
4. Cut the tubing access hole in the plate. Also cut the valve opening in the finished wall in the proper related position. (See Figure 3)
5. Bring tubing through access hole in plate even with opening in wall. Coat outside of tubing end with adhesive. (NOTE: If low voltage system is used, tape wires to tubing before inserting tube in wall.) (See Figure 4)
6. To assemble "O" ring and interior mounting bracket (long tab at the top), place the intake end of the 90° elbow in the recessed side of the bracket and secure with the four self-tapping screws. (NOTE: Slotted holes will permit adjustment to gain proper alignment between mounting bracket and elbow.) If low voltage system is used, place wires through the opening in interior mounting bracket. (See Figure 1 & 5)
7. Put elbow and bracket assembly through wall opening with a swinging motion and connect elbow to tubing. Bracket should fit snugly into hole and rest on the bottom of the wall opening. (See Figure 5)
8. Place low voltage wires through rectangular opening in exterior mounting bracket. Insert the long machine screws through the large holes on each side of the large opening and thread into matching holes in the interior mounting bracket. Tighten screw until the wall is gripped securely between the brackets. (See Figure 6)
9. Splice the low voltage connector wires to the leads coming from the unit and snap in place on the male connectors of the low voltage switch. Insert valve nipple into opening in the mounting brackets (the use of soap on "O" ring will simplify the assembly of valve to elbow); use care to feed low voltage wires back into opening. Secure wall valve in position using the two short machine screws. (See Figure 7)
10. On walls of thickness 5/16" or less, shims should be added at top and bottom edges of the wall opening. These may be glued in place per Figure 8.

INSTALLING A WALL VALVE ASSEMBLY IN EXISTING CONSTRUCTION

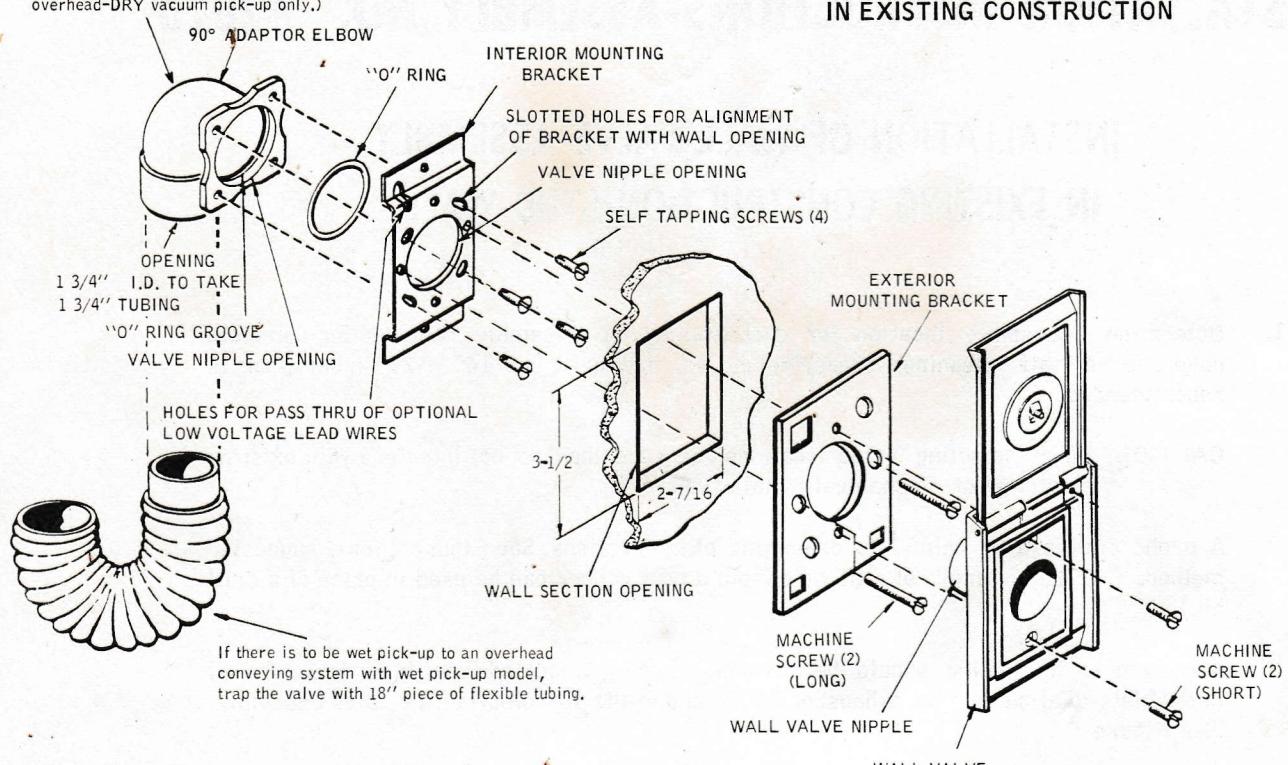


FIGURE 1

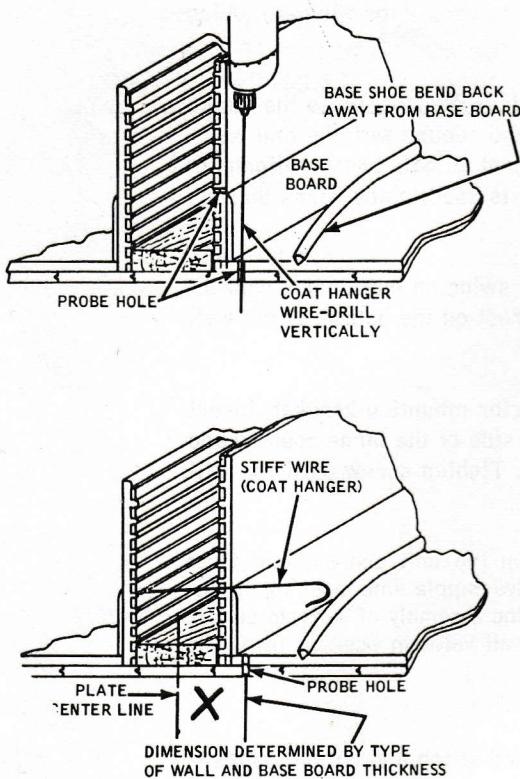


FIGURE 2

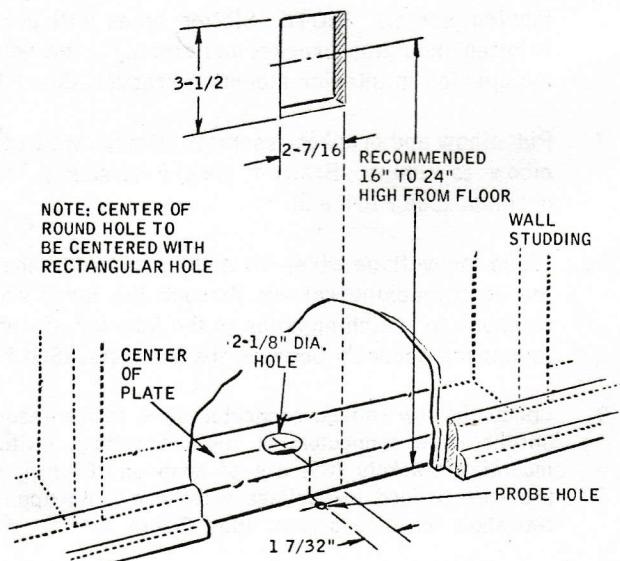


FIGURE 3

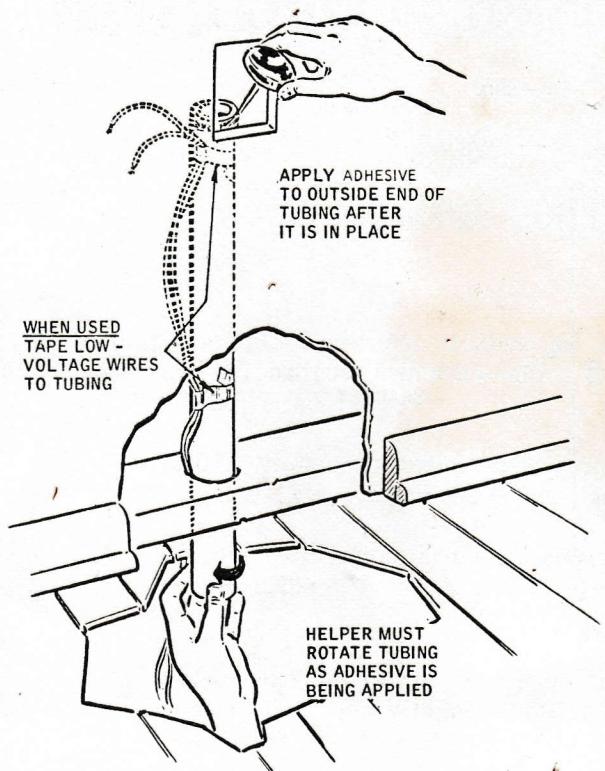


FIGURE 4

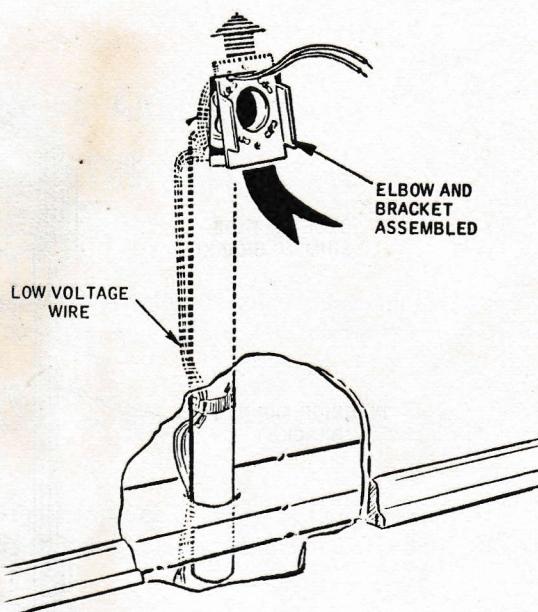


FIGURE 5

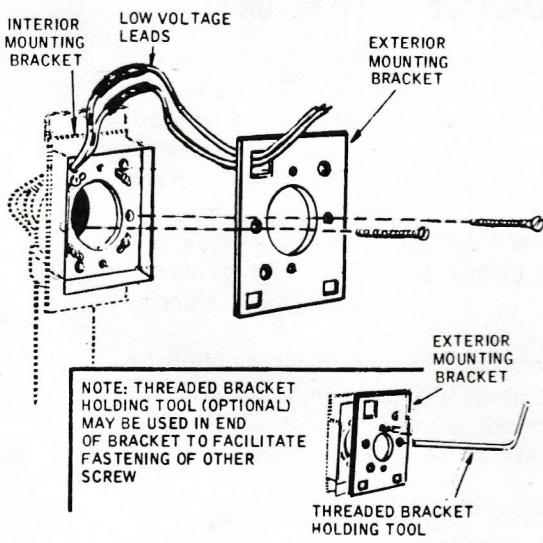


FIGURE 6

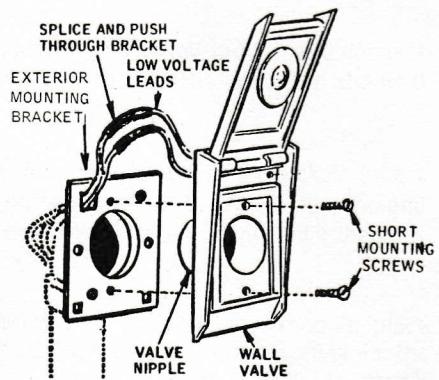


FIGURE 7

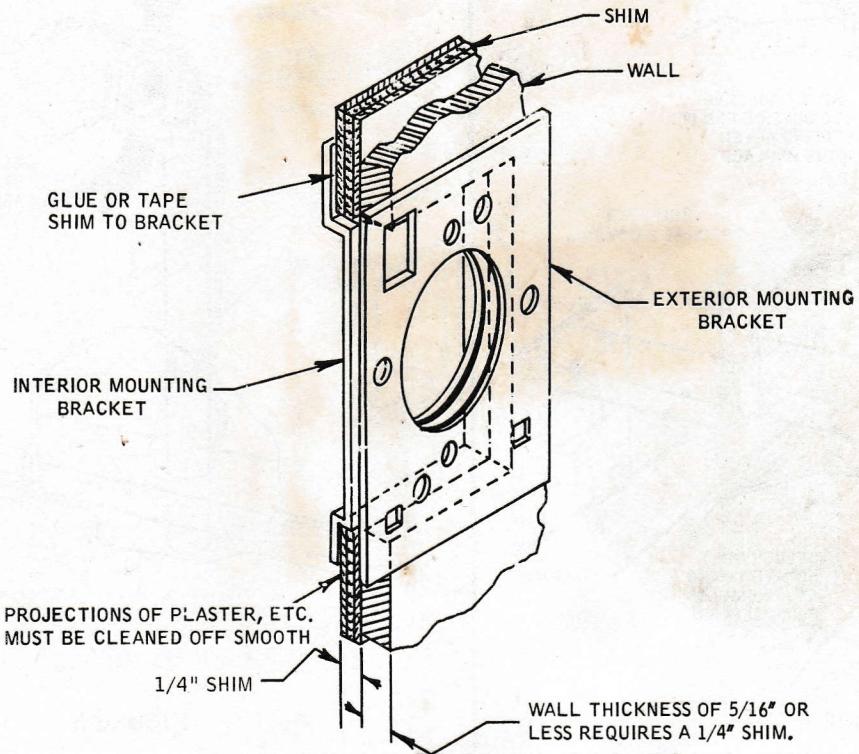


FIGURE 8

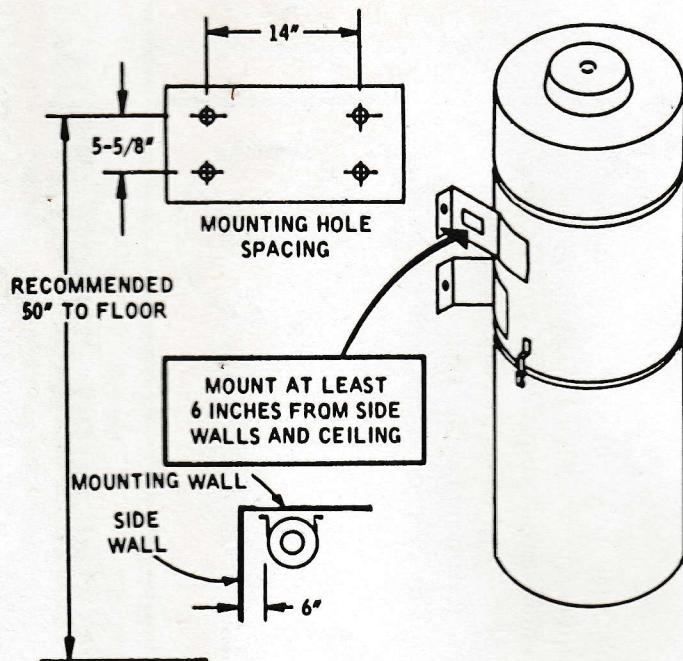
VALVES AND VALVE FITTINGS FOR SPECIAL APPLICATIONS SUCH AS STRAIGHT-THROUGH, FLOOR VALVE, ETC. ARE ALSO AVAILABLE IN THE FLOOR CARE DEPARTMENT.

MOUNTING DETAILS

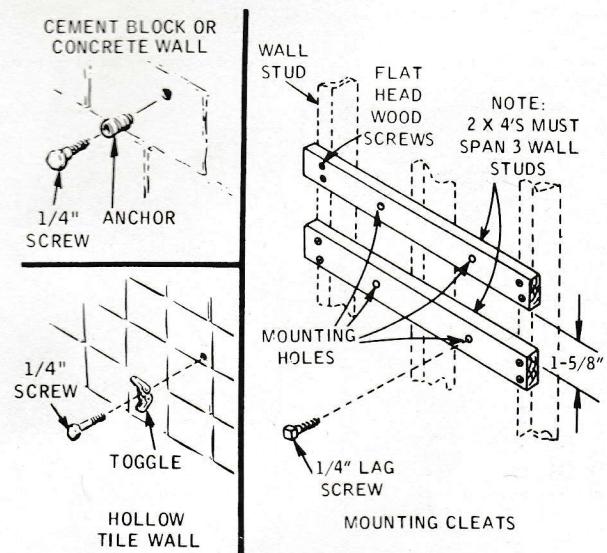
To minimize sound of motor, locate the power unit away from living and traffic areas with consideration for accessibility to electrical connections as well as connection to the intake and exhaust ports. Locate the exhaust vent away from patios, porches, and walkways.

CAUTION: Unit must not be mounted outside of shelter.

1. SELECT POSITION FOR MOUNTING



2. PROVIDE FOR FASTENERS.



NOTE: USE EITHER HEX OR SQUARE HD. SCREWS FOR MOUNTING UNIT TO WALL. DO NOT USE SLOTTED HD.

The unit should be located as illustrated above which provides space to handle the lower canister when disconnected from the upper chamber.

For convenient access and adequate air circulation, mount the unit at least 6" from the wall.

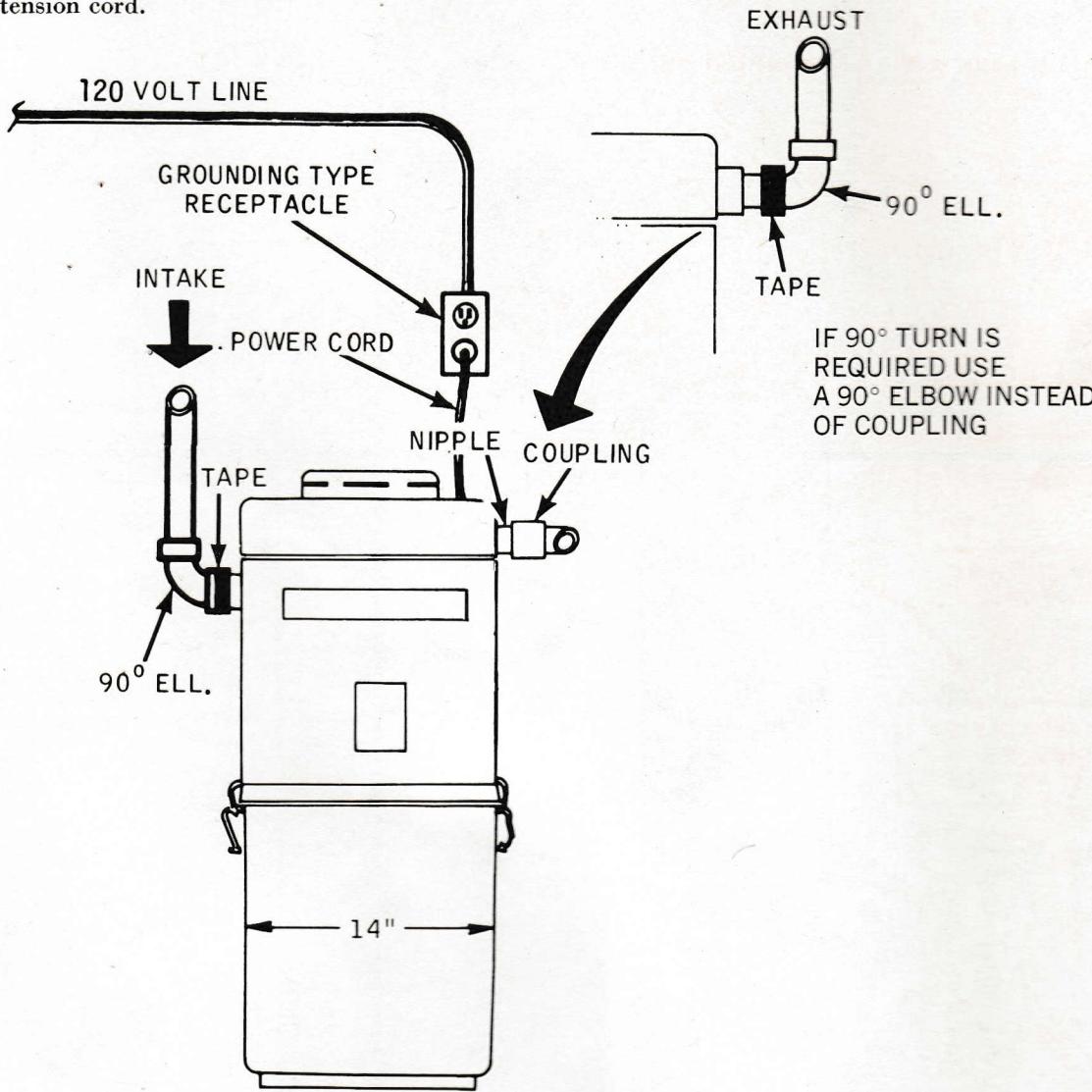
The unit must be mounted securely using both brackets to prevent excess vibration.

It is recommended that cleats cover three studs when secured to a stud constructed wall.

ELECTRICAL INSTALLATION

OBSERVE ALL GOVERNING CODES AND ORDINANCES

1. A 120 volt 60 Hz AC only 15 ampere fused electrical supply is required (time delay fuse or circuit breaker is recommended). It is also recommended that a separate circuit serving only this appliance be provided. Do not use an extension cord.



2. Electrical Connection

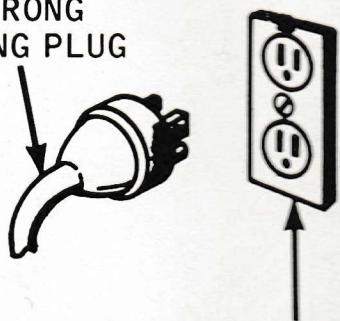
Electrical ground is required on this appliance.

RECOMMENDED GROUNDING METHOD

DO NOT, UNDER ANY CIRCUMSTANCES, REMOVE THE POWER SUPPLY CORD GROUND PRONG.

For your personal safety, this appliance must be grounded. This appliance is equipped with a power supply cord having a 3-prong grounding plug. To minimize possible shock hazard it must be plugged into a mating 3-prong grounding type wall receptacle, grounded in accordance with the National Electrical Code and local codes and ordinances. If a mating wall receptacle is not available, it is the personal responsibility and obligation of the customer to have a properly grounded 3-prong wall receptacle installed by a qualified electrician.

POWER SUPPLY CORD
WITH 3-PRONG
GROUNDING PLUG



GROUNDING TYPE
WALL RECEPTACLE

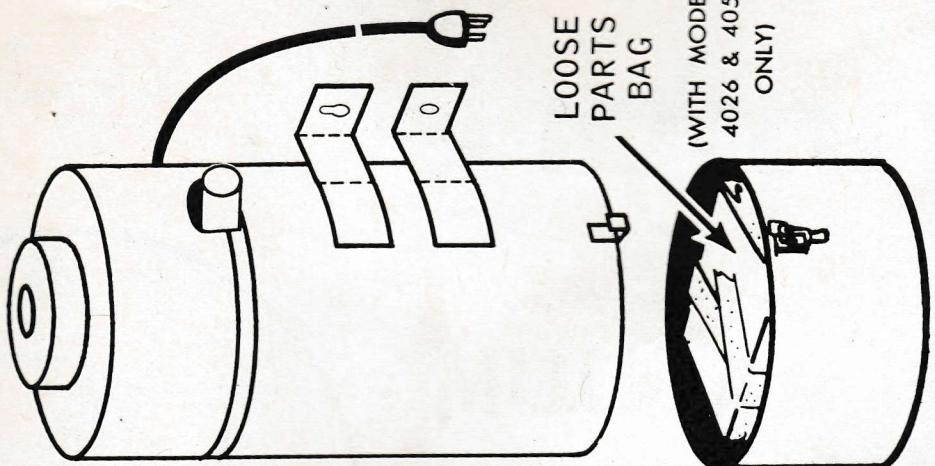
INSTALLATION PROCEDURE BUILT-IN VACUUM CLEANING SYSTEM

1 UNPACK

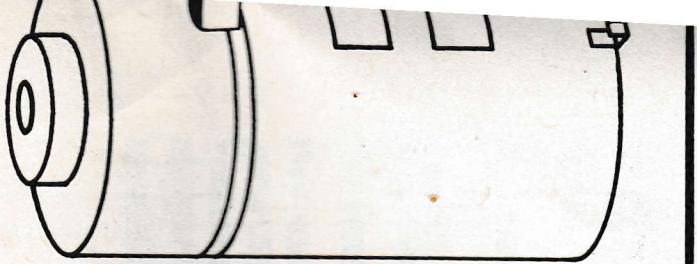
Remove all packing material and parts from the interior of the unit and tape from the exterior.

2 MOUNT TO WALL

After locating and providing
install the two top screws p
Install the remaining screws



3



4

CONNECT LOW VOLTAGE WIRING TO TERMINAL SCREWS

Inlet valve switches to be wired in parallel and connected to the screw terminals on the top of the upper hood.



5 CONNECT INTAKE LINE

For ease in removal of intake
the intake tube be taped in p

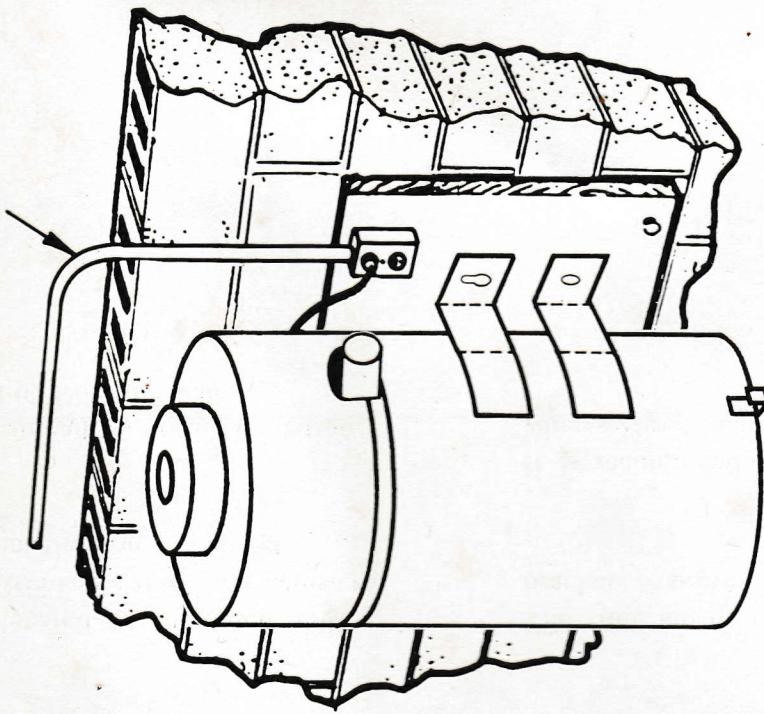
Deliver This Sheet To Owner After Completion Of Installation

IMPORTANT: Electrical Connections Must Comply With Local Codes

3 CONNECT TO POWER

Mount canisters as shown under mounting details, lay and hang the upper canister in place. Tighten all screws securely.

Provide a separate 120 volt, 15 amp grounded circuit with delay type (Fusetron) fuse. A grounding type receptacle must be used to accommodate the mating three prong plug on the power cord. Wiring must comply with local governing codes and the National Electrical Code.

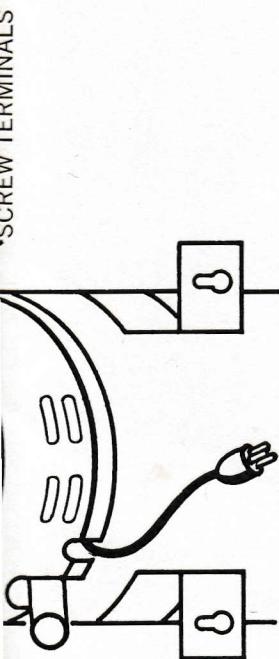


6 CONNECT EXHAUST LINE

is recommended that the connection to facilitate removal.

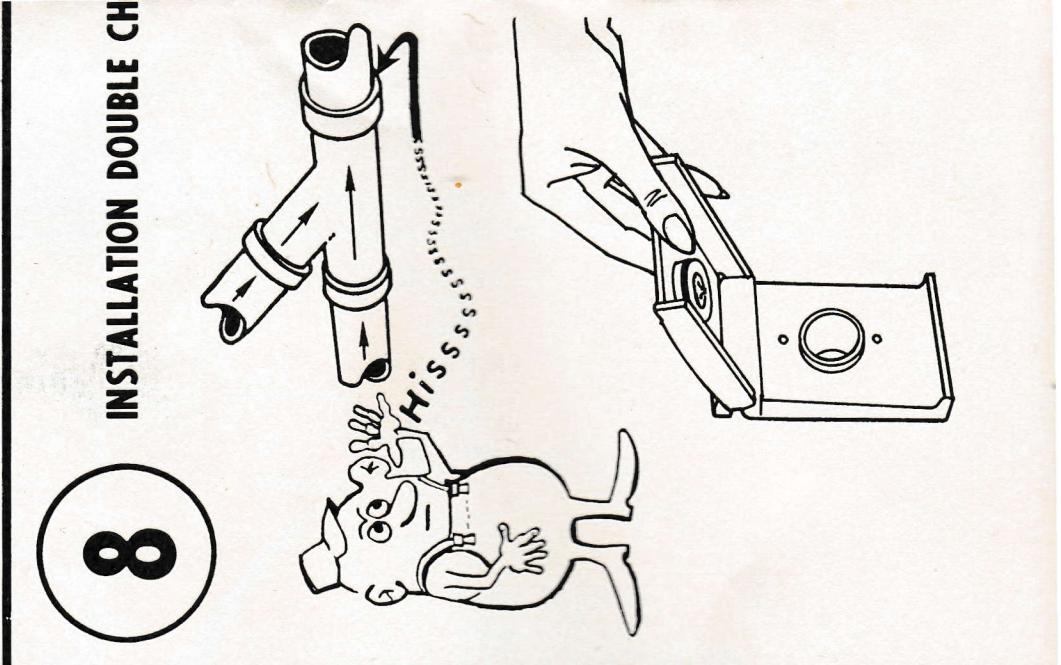
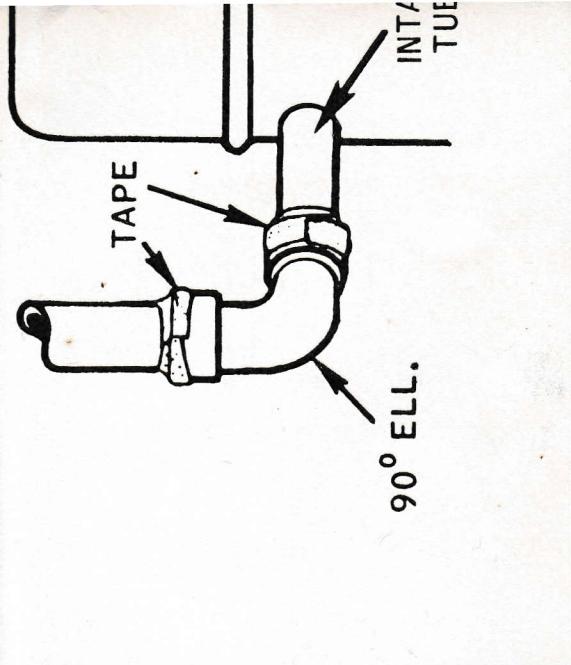
The unit must be exhausted outside and should have the vent located away from living and traffic areas.

For ease in removal of exhaust line it is recommended that the connection to the exhaust port be made with tape.



Recommended wire sizes for low voltage control system as related to length of run as follows:

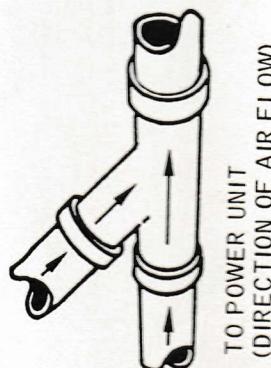
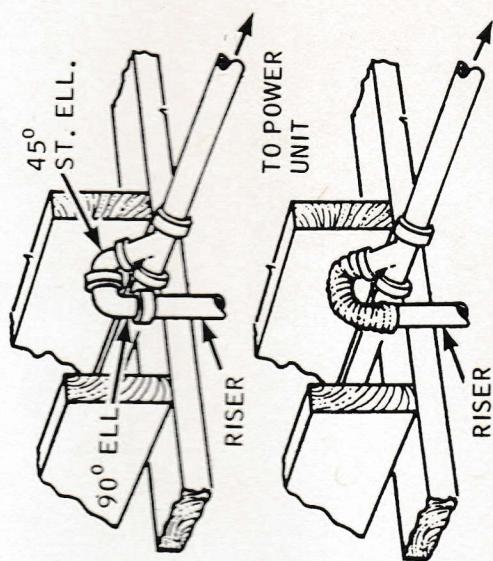
Wire Size	Maximum Length of Run From Distant Switch	Control to Most
18 ga.	650 ft.	
20 ga.	400 ft.	
22 ga.	250 ft.	
24 ga.	150 ft.	

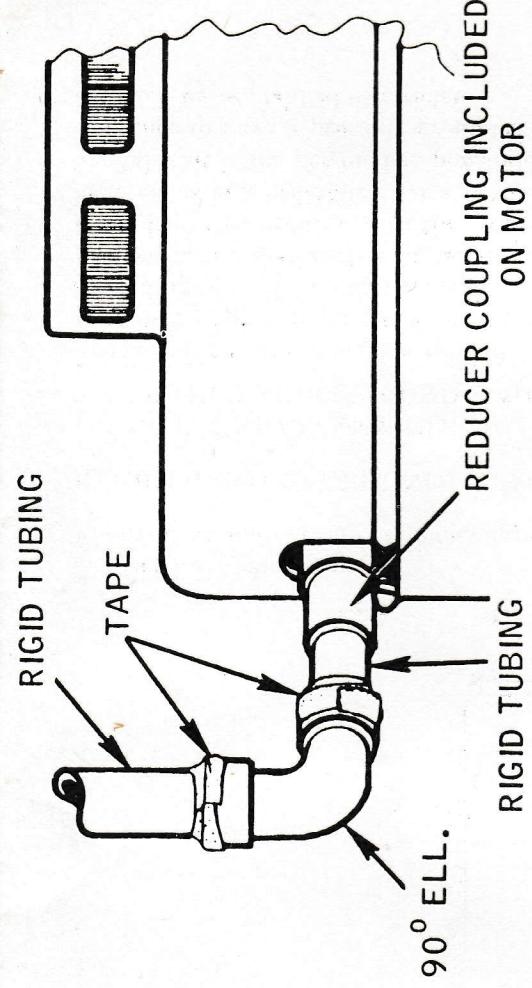


7 INSTALLATION OF BRANCH FITTING WITH CONNECTION TO VERTICAL RISER

Branch fittings must always be installed with the leg pointing toward the power unit which is the direction of air flow.

The leg must always be up when used on a horizontal run of the main trunk line; the vertical riser may be connected with rigid fittings or flexible tubing.





OPERATIONAL CHECK—CUSTOMER INSTRUCTION

9



- Check Suction — Using a vacuum gauge the suction should be 100 ± 10 inches of water (If reading is less, check for leaks).
- Try hose in each valve to be certain operation and fit is proper.
- Instruct customer to empty dirt canister periodically (every 2 to 3 months) and to check and clean the filter if needed.
- Instruct the customer to refer to the Owner's Manual for things to check if the cleaner becomes inoperative.
- Is the unit securely fastened to wall?
- Make certain cleaner has a properly grounded circuit and receptacle.
- Make certain electricity is turned on.
- Check to see if power cord is plugged in.
- Check power cord and low voltage connections.
- Check out each low voltage switch for operation, by opening cover on each wall valve assembly.
- Check transmission system joints for leaks.

INSTALLATION INSTRUCTIONS

for

Kenmore

Built-in Vacuum Cleaning System



**KENMORE — Sold and Serviced Nationally by
SEARS, ROEBUCK AND CO.**
SIMPSONS-SEARS LIMITED — CANADA

TABLE OF CONTENTS

	Page No.
I. LOCATING THE POWER UNIT	3
II. CONVEYING SYSTEM	3
A. Layout by Home Style	3
1. Ranch Style with Basement	3
2. Ranch Style without Basement	4
3. Two-Story Style	4
4. Split-Level Style	5
5. Flat Roof Style	5
B. Locating The Inlet Valves	6
1. Proposed New Construction	6
2. Existing Construction	6
C. Fabrication Procedure	7
D. Installation Hints	9
E. Do's and Don't's	10
III. INSTALLLING ELECTRICAL WIRING	11
A. Conventional	11
B. Low Voltage System	11
IV. MATERIAL LIST	12
A. Valves	12
B. Tubing	13
C. Fittings	13
D. Sealants	14
V. SUGGESTED TOOLS	15

SECTION 1

LOCATING THE POWER UNIT

With consideration for connecting to electric power, intake and exhaust lines, as well as consideration for convenience of emptying the dirt canister, the power unit may be installed almost anywhere space is available, such as: basements, utility rooms, garages, carports, or on the exterior of buildings. (NOTE: If installed outside, the power unit must be protected from the weather. Protection must be sufficient to shield from rain, snow, lawn sprinklers, etc.) For quietness of operation, the power unit should be mounted on a solid wall and be remote from the living area.

NOTE: The power unit must be placed in a well-ventilated area to prevent the motor from overheating, and must be provided with an outside exhaust line. The outside exhaust should be away from living and traffic areas such as patios, porches, walks, and doorways.

WARNING: ELECTRIC SHOCK COULD OCCUR IF USED OUTDOORS OR ON WET SURFACES WITHOUT AQUA LIFT ATTACHMENT MODEL 44510 OR CLASS BWAI.

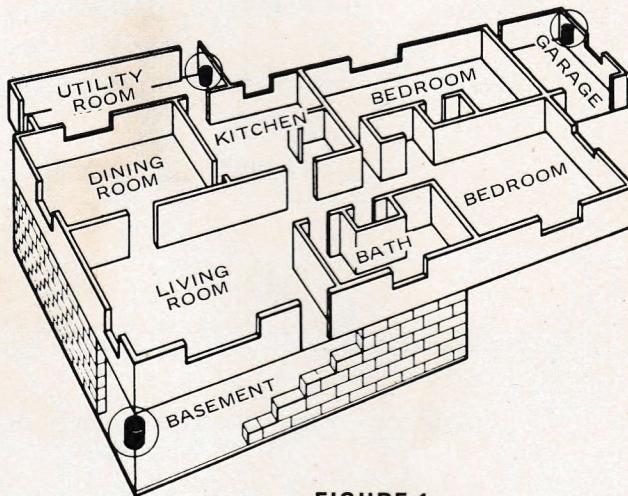


FIGURE 1

SECTION II

CONVEYING SYSTEM

- A. Layout by Home Style
- B. Locating the inlet valves
- C. Fabrication Procedure

Schematic Layout of Transmission Lines

New Construction — Valve Mounting Plate and Plaster Guard

- D. Installation Hints
- E. Do's and Don't's

A. LAYOUT BY HOME STYLE

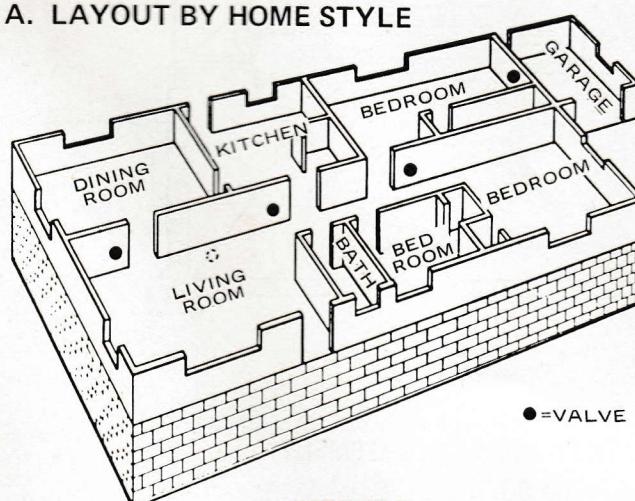
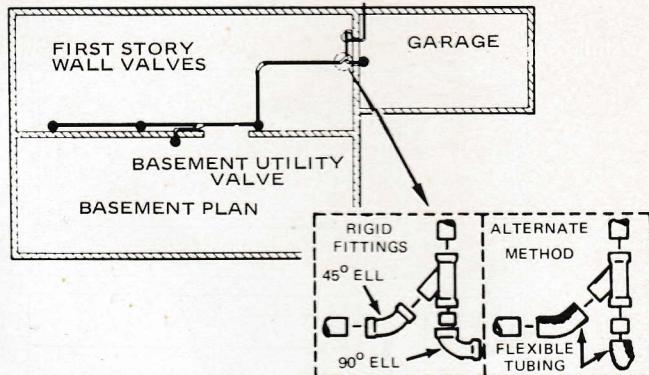


FIGURE 2



Typical plan and elevation views of a five valve vacuum cleaning system installed in a ranch style one story home, with basement. Tubing, conveying system, and power unit installed in basement with tubing runs at ceiling height.

The conveying schematic is basically the same for any one story design. If there is no basement, mount the power unit in main floor utility room or in carport or garage. The tubing system may be installed in an under-floor crawl space or in the slab with vertical runs up to main floor inlet valves, similar to basement installations.

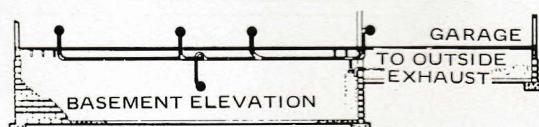
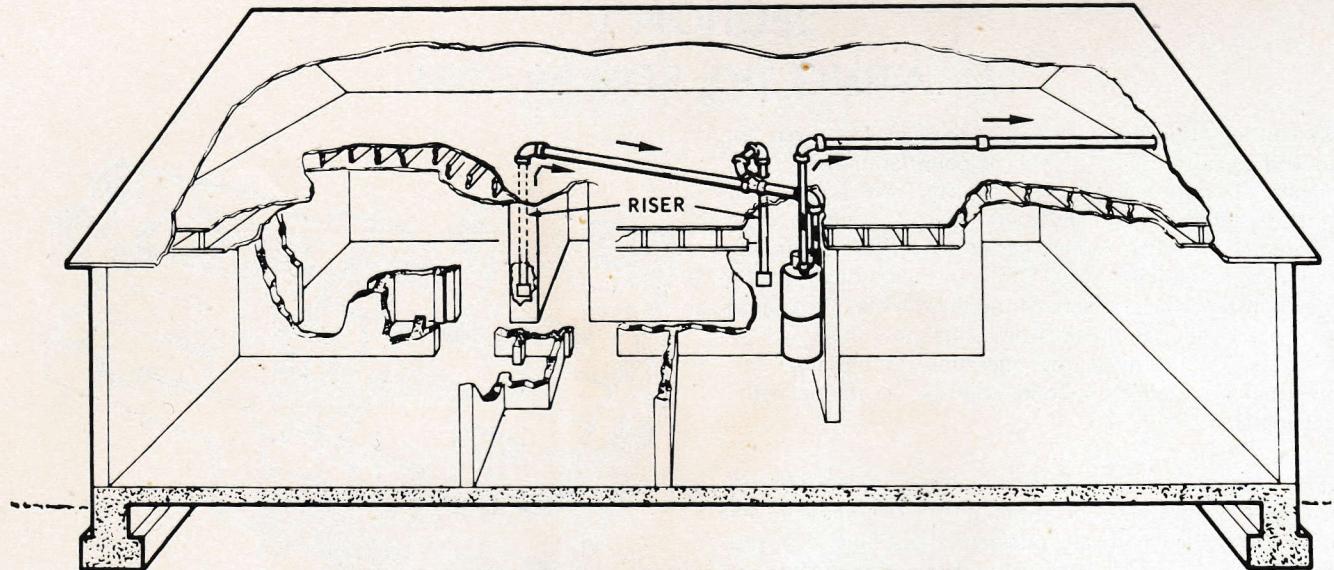


FIGURE 3 – TYPICAL INSTALLATION IN RANCH
STYLE HOME WITH BASEMENT



NOTE: THE USE OF FLEXIBLE TUBING FOR ELBOWS IS OPTIONAL
FOR CONVENIENCE OF INSTALLATION

CONNECTING NIPPLES ARE CUT TO LENGTH
FROM STANDARD RIGID TUBING

FIGURE 4 – TYPICAL OVERHEAD INSTALLATION IN RANCH STYLE HOME WITHOUT BASEMENT

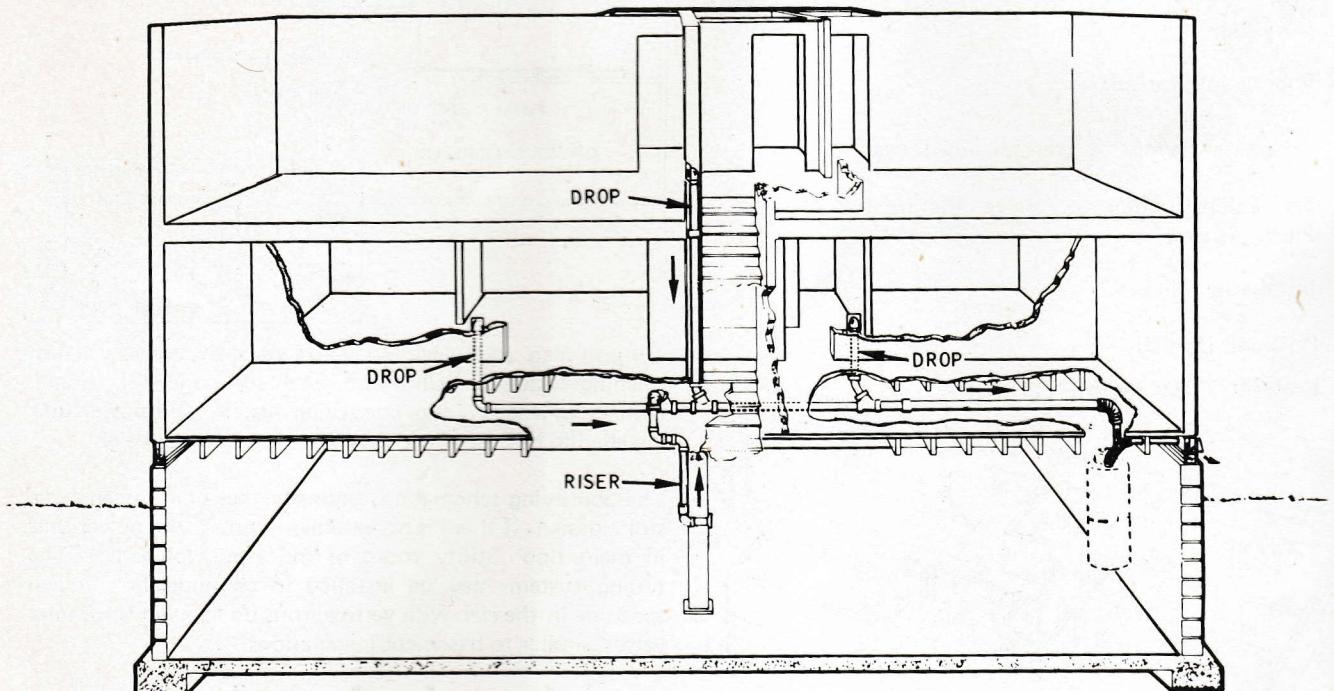


FIGURE 5 – TYPICAL INSTALLATION IN 2-STORY HOME WITH BASEMENT

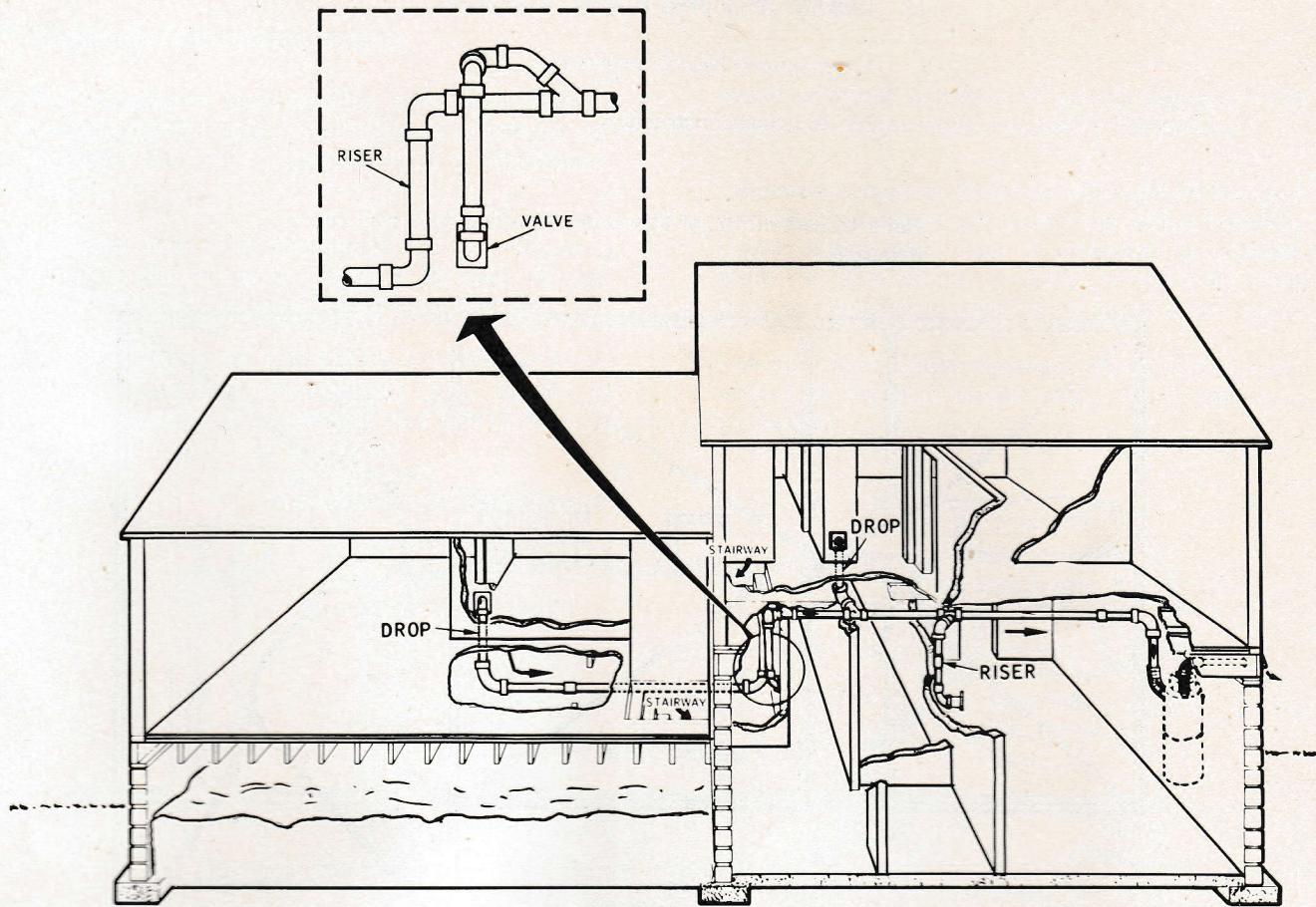


FIGURE 6 – TYPICAL INSTALLATION IN SPLIT-LEVEL STYLE HOME

NOTE- INTAKE & EXHAUST CONNECTIONS ARE NOT SHOWN IN POSITION AS THESE LOCATIONS ARE NOT COMMON ON ALL MODELS. (SEE MOUNTING INSTRUCTIONS FOR "EXHAUST" AND "INTAKE" LOCATIONS.

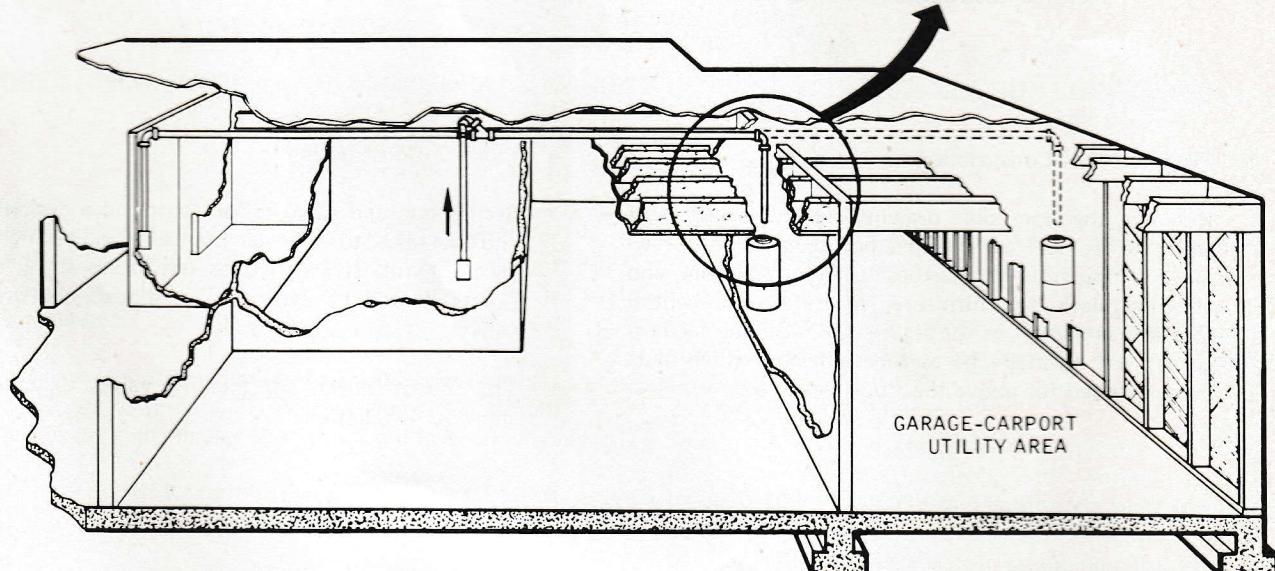
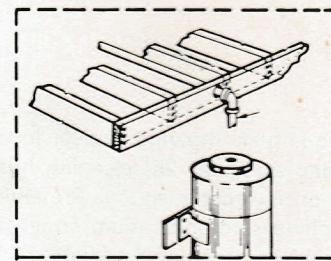
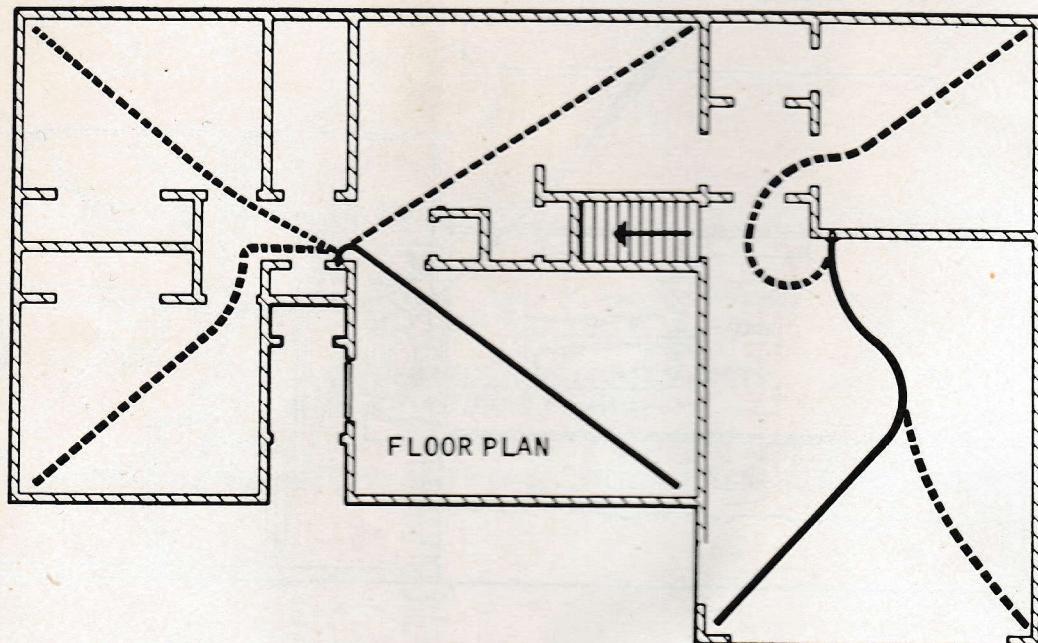


FIGURE 7 – INSTALLATION IN LOW PITCH (NOT BUILT-UP) ROOF WITHOUT BASEMENT

B. LOCATING THE INLET VALVES

1. Proposed New Construction
2. Existing Construction

Refer to Section IV. of this booklet for listing of available materials.



Floor plan showing typical locations and areas covered by a three inlet valve vacuum system using a regular 25' cleaning hose. Height of wall valve is optional but 16" to 24" above the floor is recommended. Preferably, inlet valves are put in hallways and close to door and archways for maximum convenience and reach, not in the middle of wall areas where they could be obstructed by large pieces of furniture and equipment.

1. Proposed New Construction

Refer to the floor plan drawing and cut a length of string to 25 feet on the specified scale of the drawing. Starting from the farthest corner of a room, and allowing slack for furniture, measure to a central location as shown in the figure. (NOTE: The farthest corner will normally be at ceiling height, which must be considered for above the floor cleaning.)

2. Existing Construction

Secure one end of a 25-foot string to a desired point and measure to the far points of adjoining rooms (See Figure). If string does not reach to all desired points, it will be necessary to relocate the proposed valve.

The use of closets for locating valves may serve to simplify installation.

C. FABRICATION PROCEDURE

The transmission system tubing may be installed in several different ways. A number of these methods are illustrated in Section C under the heading "Installation Hints".

Generally, it is faster and simpler to start the installation of the conveying system at the valve farthest from the power unit, and work toward the unit.

CARE SHOULD BE TAKEN TO PROPERLY POSITION BRANCH FITTINGS SO THE FLOW IS ALWAYS DIRECTED TOWARD THE UNIT. The lines

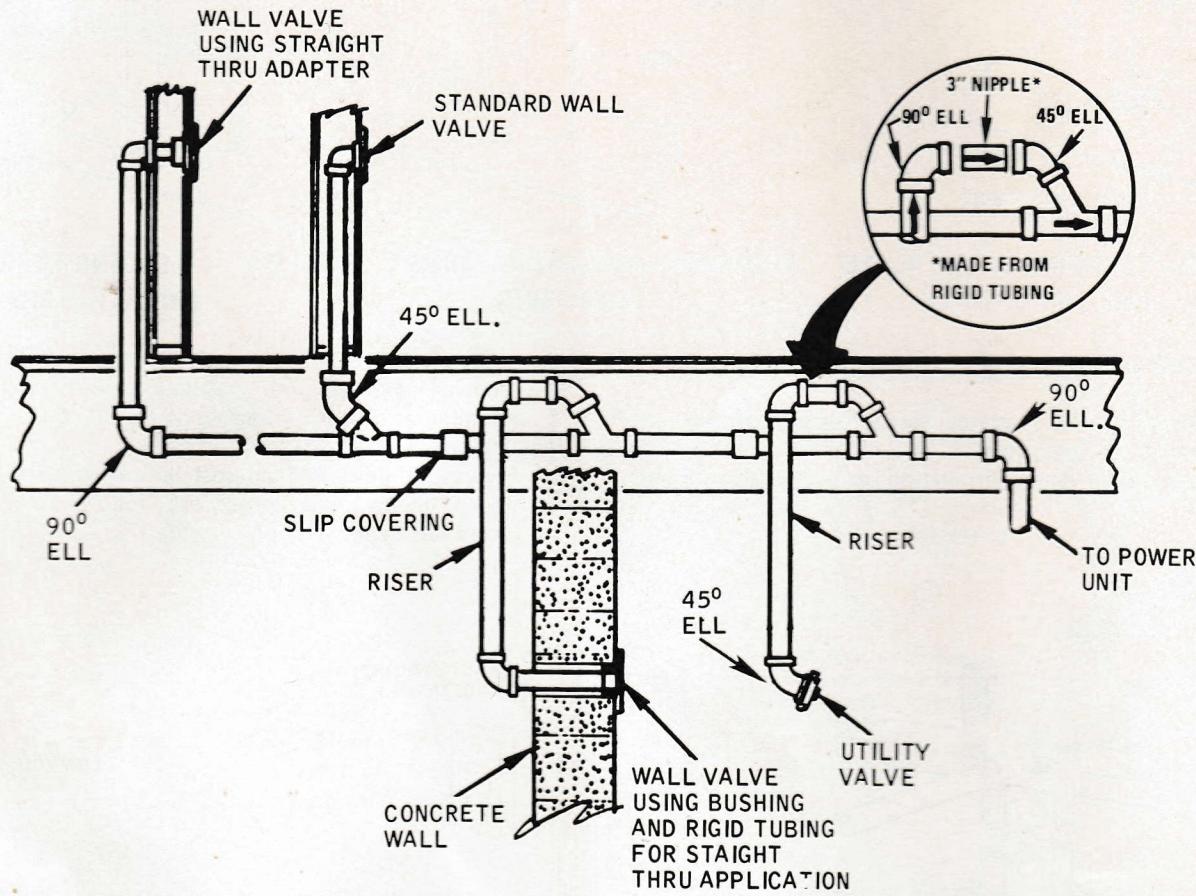


FIGURE 8 – SCHEMATIC LAYOUT EMPLOYING A VARIETY OF AVAILABLE INSTALLATION COMPONENTS

INSTALLING WALL VALVE MOUNTING PLATE AND BRACKET IN NEW CONSTRUCTION

- Determine location for each wall valve required for complete coverage of all areas to be cleaned. Height is optional, but 16" - 24" from floor is recommended.
- Nail valve mounting plate to stud at desired height for each valve. (Figure 9) The plate may be mounted to either the right or left side of the stud.

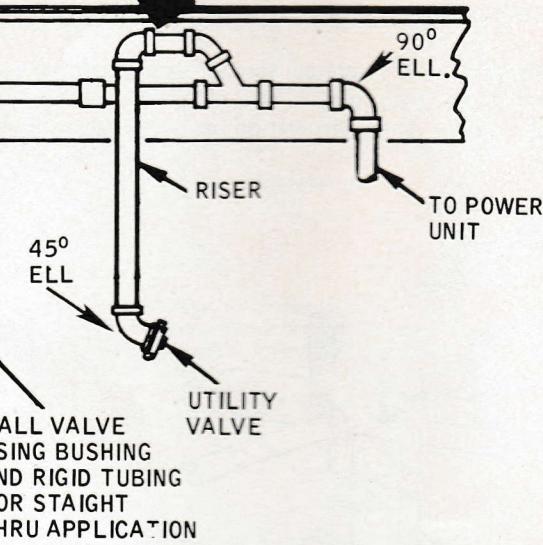
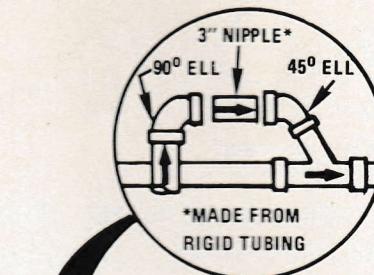
NOTE: If wall is to be covered with 1/4" thick paneling, recess bracket until it's flush with stud.

- Drill hole through floor or ceiling plate. Hole should be 1-5/8" back from front of plate to align with the

should be firmly supported to prevent sagging — strap hangers or clamps should be used for this purpose.

Connections must be sealed vacuum-tight for efficient operation. Joints can be made either with adhesive or plastic sealing tape. Tape is preferable on exposed joints, as it is simple to apply; in the wall, joints must be cemented, as there is no access to do taping.

The illustration below illustrates several typical applications of available components used in making an installation.



exhaust or belled side of the 90° elbow of the valve assembly (Figure 9).

- Put rigid tubing through hole in plate and connect elbow to tubing using adhesive to seal the joint (Figure 10).
- Assemble "O" ring and mounting bracket to elbow, using the four screws through the slotted holes in bracket. Make sure "O" ring is properly seated before adjusting for alignment with stud. Tighten screws completely. Use perforated strapping, hangers or clamps to firmly support the tubing (Figure 11).

C. FABRICATION PROCEDURE

The transmission system tubing may be installed in several different ways. A number of these methods are illustrated in Section C under the heading "Installation Hints".

Generally, it is faster and simpler to start the installation of the conveying system at the valve farthest from the power unit, and work toward the unit.

CARE SHOULD BE TAKEN TO PROPERLY POSITION BRANCH FITTINGS SO THE FLOW IS ALWAYS DIRECTED TOWARD THE UNIT. The lines

should be firmly supported to prevent sagging — strap hangers or clamps should be used for this purpose.

Connections must be sealed vacuum-tight for efficient operation. Joints can be made either with adhesive or plastic sealing tape. Tape is preferable on exposed joints, as it is simple to apply; in the wall, joints must be cemented, as there is no access to do taping.

The illustration below illustrates several typical applications of available components used in making an installation.

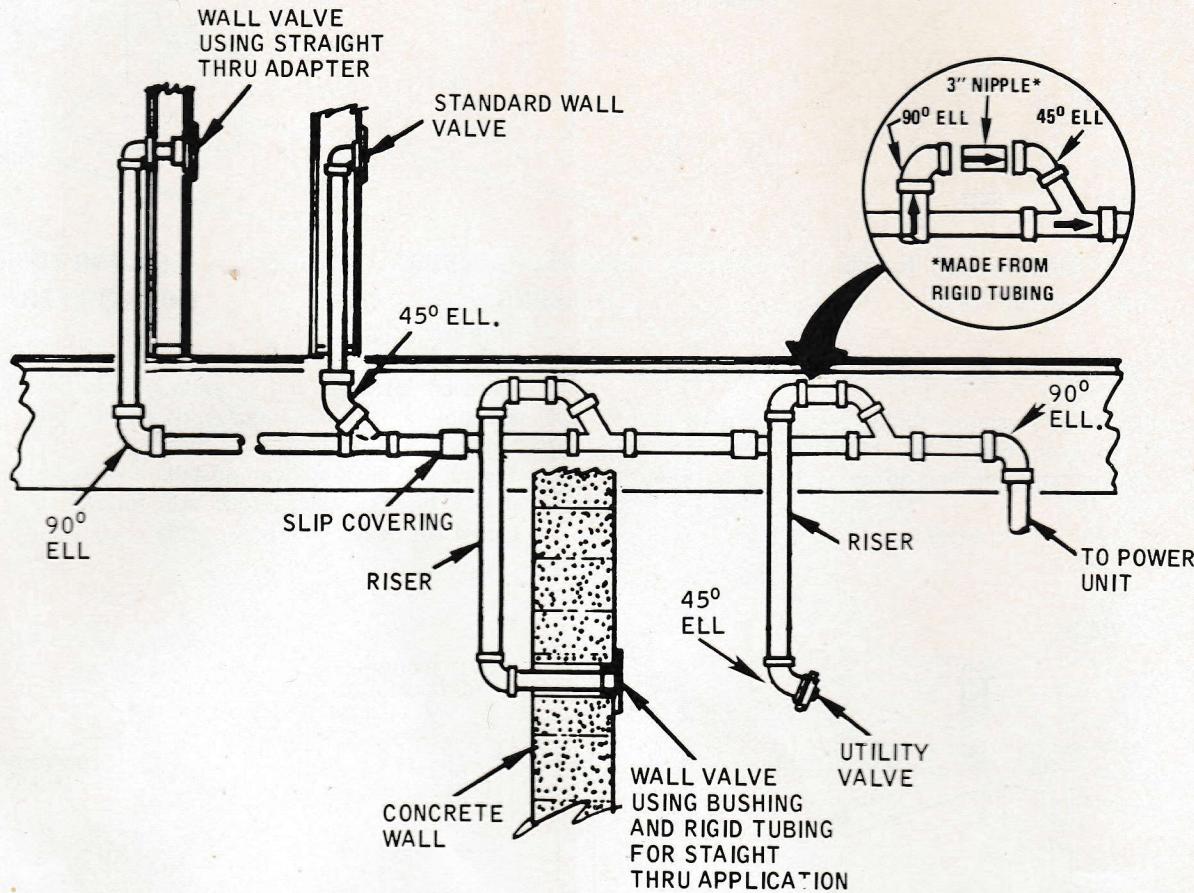


FIGURE 8 – SCHEMATIC LAYOUT EMPLOYING A VARIETY OF AVAILABLE INSTALLATION COMPONENTS

INSTALLING WALL VALVE MOUNTING PLATE AND BRACKET IN NEW CONSTRUCTION

- Determine location for each wall valve required for complete coverage of all areas to be cleaned. Height is optional, but 16" — 24" from floor is recommended.
- Nail valve mounting plate to stud at desired height for each valve. (Figure 9) The plate may be mounted to either the right or left side of the stud.

NOTE: If wall is to be covered with 1/4" thick paneling, recess bracket until it's flush with stud.

- Drill hole through floor or ceiling plate. Hole should be 1-5/8" back from front of plate to align with the

exhaust or belled side of the 90° elbow of the valve assembly (Figure 9).

- Put rigid tubing through hole in plate and connect elbow to tubing using adhesive to seal the joint (Figure 10).
- Assemble "O" ring and mounting bracket to elbow, using the four screws through the slotted holes in bracket. Make sure "O" ring is properly seated before adjusting for alignment with stud. Tighten screws completely. Use perforated strapping, hangers or clamps to firmly support the tubing (Figure 11).

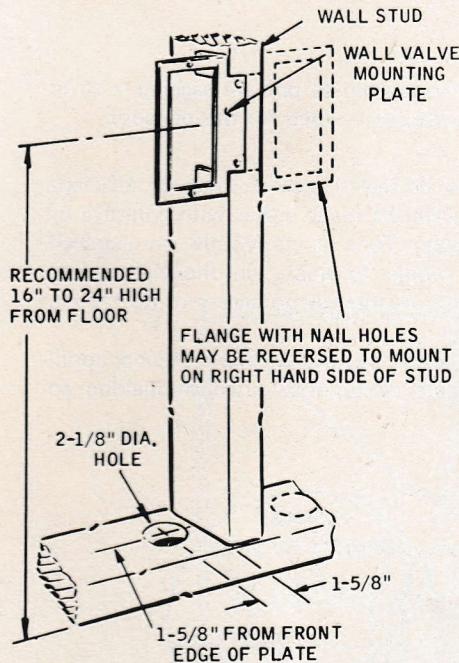


FIGURE 9 – LOCATING VALVE PLATE AND TUBING HOLE

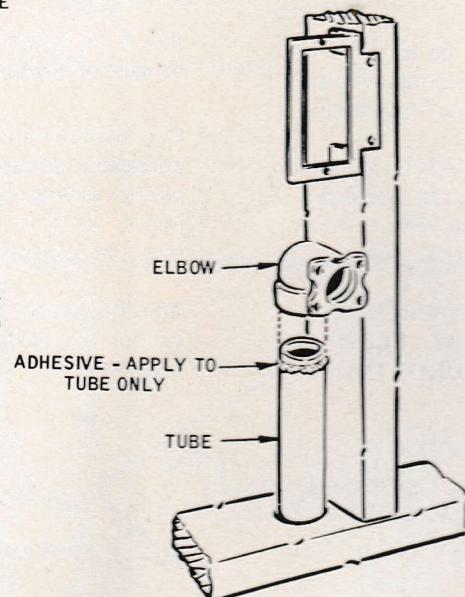


FIGURE 10 – MOUNTING ELBOW TO TUBING

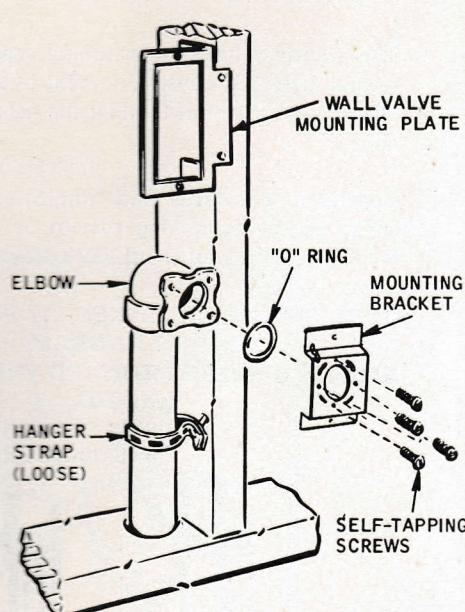


FIGURE 11 – SECURING TUBING AND MOUNTING BRACKET.

6. Screw bracket to wall valve mounting plate.
7. If wall is to be plastered, screw plaster guard to valve bracket to keep plaster out of elbow and to form opening for later installation of wall valve (Figure 13).

8. After plastering is completed and the plaster guard is removed, proceed with installation of the wall valve assembly as outlined in valve kit instructions.
9. Figure 12 illustrates an installation to an overhead line. The assembly procedure follows the others called out in this section.

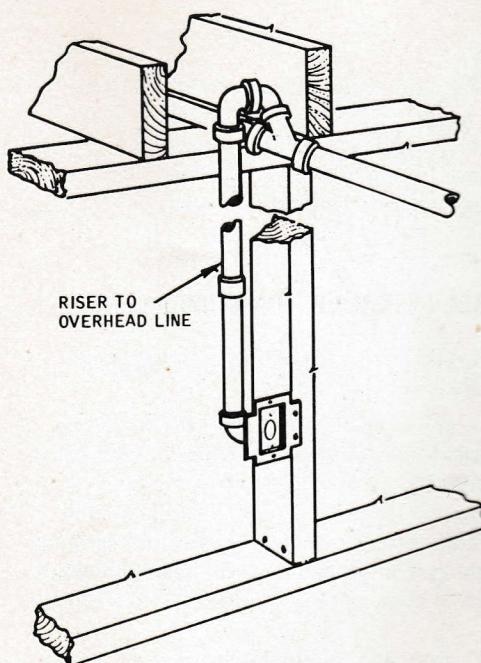


FIGURE 12

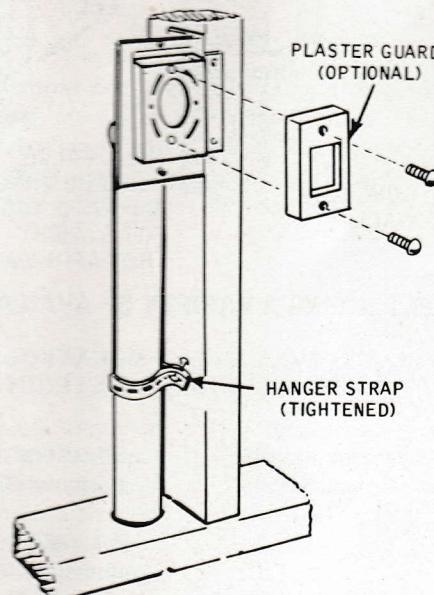


FIGURE 13 – INSTALLING PLASTER GUARD.

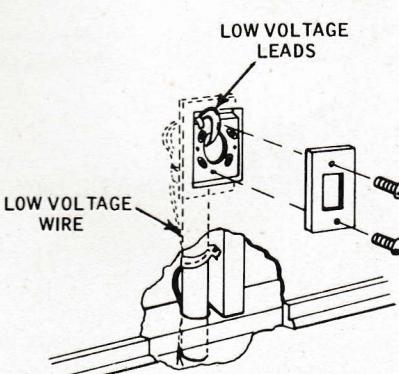


FIGURE 14

IMPORTANT: When the low voltage control system is to be used, the wires should be taped to the tubing and passed through the mounting bracket and then tucked back into the elbow prior to installing the plaster guard, (See Figure 14).

D. INSTALLATION HINTS

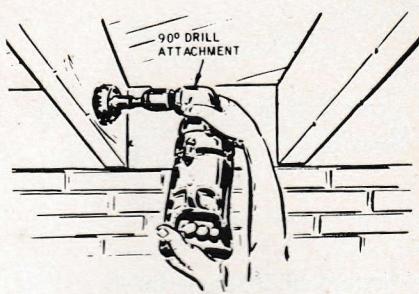


FIGURE 15 – DRILLING THROUGH JOISTS

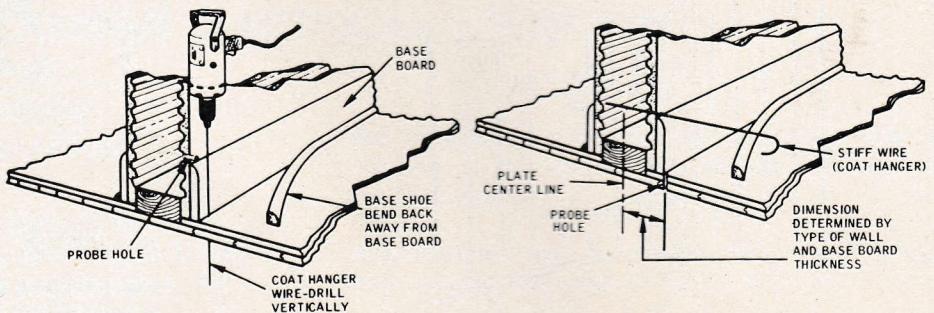


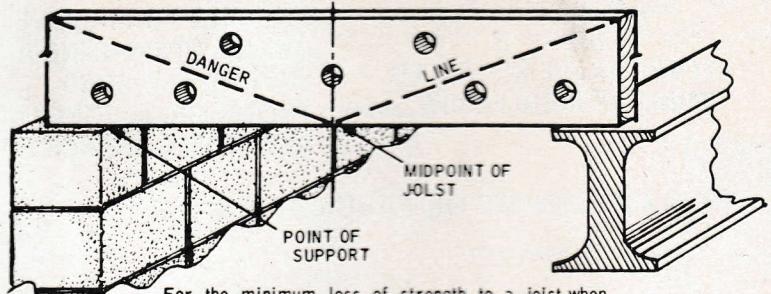
FIGURE 17 – LOCATING CENTER LINE OF PLATES



FIGURE 16 – DRILLING ABOVE A LOAD-BEARING BEAM OR SILL

DRILLING THROUGH FLOOR JOISTS

Joists should never be notched to accommodate tubing as notching greatly reduces the strength of the joist.



For the minimum loss of strength to a joist when drilling, keep holes away from a line which is projected from the center to the ends as shown. Holes shown would be in a desirable location.

FIGURE 18

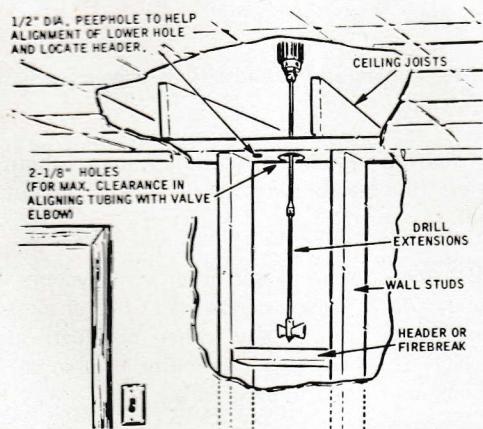


FIGURE 19 – DRILLING THROUGH FIREBREAK OR HEADER WITH EXTENSION DRILLS

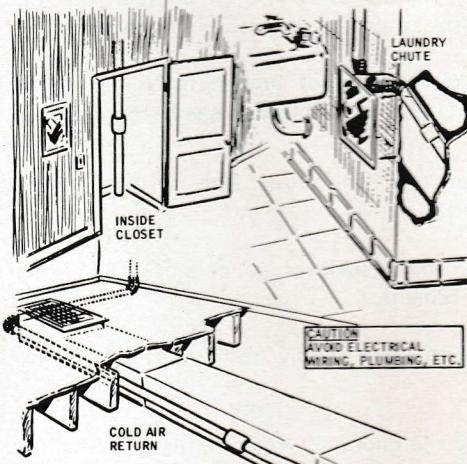


FIGURE 20 – UTILIZING EXISTING PASSAGES FOR RUNNING OF CONVEYOR TUBING

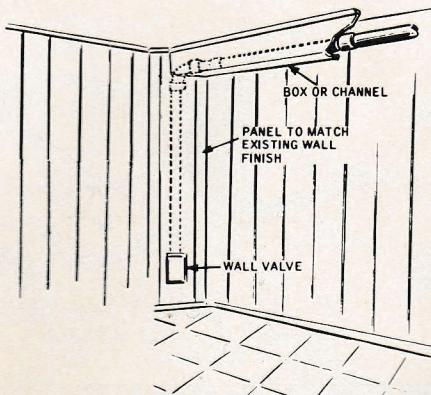
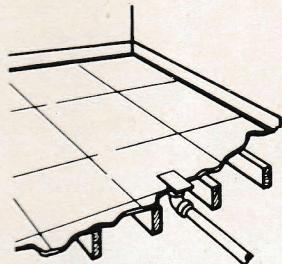
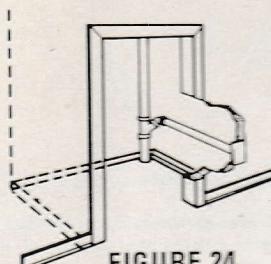


FIGURE 21 – TUBING CONCEALED IN FINISHED ROOM BY CORNERING AND BOXING IN



**FIGURE 23
FLOOR VALVE INSTALLED
USING 90° RIGID ELBOW**



**FIGURE 24
STRAIGHT THRU VALVE
INSTALLATION USING A
BUSHING AND RIGID
TUBING CONNECTING INTO
AN EXPOSED BRANCH FITTING**

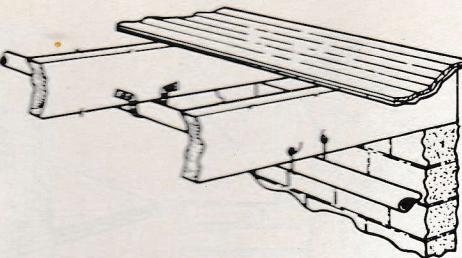
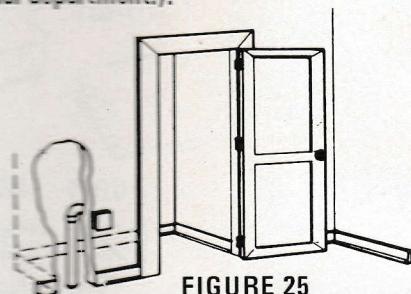


FIGURE 22

Wire hangers or perforated strapping for supporting the transmission line (Available at plumbing supply sources – Size for 1-1/2" dia. pipe should be used.) or brick wall ties (Available in building material department.).



**FIGURE 25
STRAIGHT-THRU VALVE
INSTALLATION USED WHEN
THERE IS ACCESS TO BOTH
SIDES OF WALL SUCH AS A
CLOSET SHOWN ABOVE.**

E. DO'S AND DON'TS OF FABRICATION

DO'S

- * Do cut ends of rigid tubing square and clean.
- * Do use rigid fittings wherever possible.
- * Do trim flexible tubing clean for ease of assembly.
- * Do make sure branch fittings point in the direction of air flow (toward the unit). Refer to arrow.
- * Do make sure leg of branch fittings is pointed up when the inlet valve is below the header line.
- * Do coat only the male end of joint when using Pliobond.
- * Do coat both surfaces of a joint when using PVC solvent cement.
- * Do stretch tape tightly to conform to contour of joint.
- * Do keep the Pliobond warm during cold weather.
- * Do keep the tape warm during cold weather.

- * Do make certain exhaust and inlet lines are correctly connected to the proper ports on the unit.

DON'TS

- * Don't allow transmission lines to sag; support lines with clamps or strapping.
- * Don't leave burrs in cut ends of tubing; this can cause hang-up of dirt in the line.
- * Don't attach inlet and exhaust lines permanently; use tape or clamps.
- * Don't install power unit in confined area without air circulation (the motor will overheat and cut out on overload).
- * Don't exhaust unit into any other vent system such as chimney, dryer exhaust, hot water heater exhaust, plumbing vents, or in any other confined inside spaces. NOTE: There is a possibility that some fine dust will be contained in exhaust air.
- * Don't permit tape and glue to come chilled and brittle.

SECTION III

INSTALLING ELECTRICAL WIRING

A. ELECTRICAL INSTALLATION

OBSERVE ALL GOVERNING CODES AND ORDINANCES

1. A 120 volt 60 Hz AC only 15 ampere fused electrical supply is required (time delay fuse or circuit breaker is recommended). It is also recommended that a separate circuit serving only this appliance be provided. Do not use an extension cord.

2. Electrical Connection

Electrical ground is required on this appliance.

RECOMMENDED GROUNDING METHOD

DO NOT, UNDER ANY CIRCUMSTANCES, REMOVE THE POWER SUPPLY CORD GROUND PRONG.

For your personal safety, this appliance must be grounded. This appliance is equipped with a power supply cord having a 3-prong grounding plug. To minimize possible shock hazard it must be plugged into a mating 3-prong grounding type wall receptacle, grounded in accordance with the National Electrical Code and local codes and ordinances. If a mating wall receptacle is not available, it is the personal responsibility and obligation of the customer to have a properly grounded 3-prong wall receptacle installed by a qualified electrician. See Figure 26.

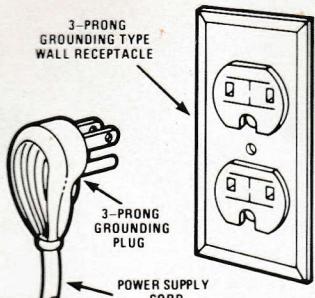


FIGURE 26

B. LOW VOLTAGE SYSTEM WIRING

The low voltage assembly provides on-off control at each valve.

Basically, this system provides the necessary electronic components to convert line voltage 120 volts AC to 24 volts, and to control the line voltage to the motor by the use of a relay switch. The advantage of this system is the ability to control the unit from many different points without the high cost of high voltage wiring procedures.

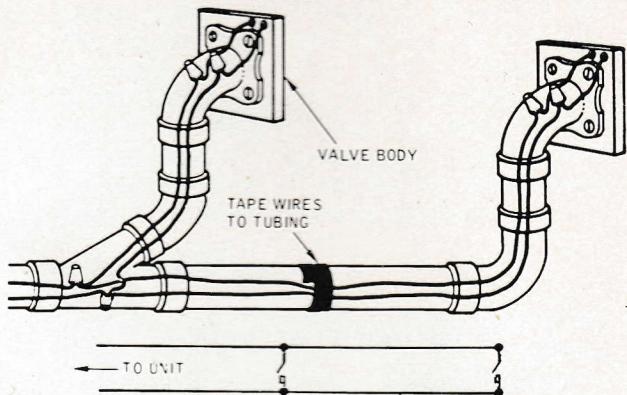
The procedure for installing the low voltage wires is included in the instructions contained in the wall valve package.

Recommended sizes for two-conductor low voltage wire as related to length of run are as follows:

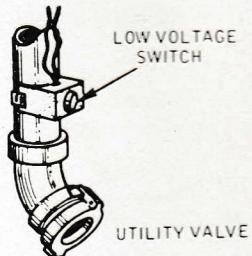
WIRE SIZE	MAXIMUM LENGTH OF RUN FROM CONTROL TO MOST DISTANT SWITCH
18 GA.	650 FT.
20 GA.	400 FT.
22 GA.	250 FT.
24 GA.	150 FT.

The length of run should be calculated from the most distant valve to the power unit.

The switches on the wall valves are connected in a parallel circuit. A diagram illustrating this type of circuit is shown below in both pictorial and schematic form.



A separate low voltage switch assembly is available for attachment to a utility valve. The connection to this switch is in parallel, the same as the wall valve assembly.



SECTION IV

MATERIAL LIST

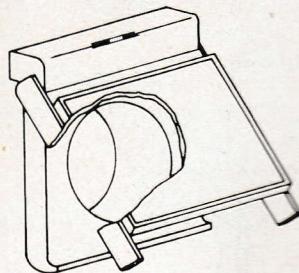
- A. Valves
- B. Tubing
- C. Fittings
- D. Sealants

A. VALVES

There are three basic valves available for a built-in installation; all others are variations of the basic valves. Installation details are packed in each valve kit.

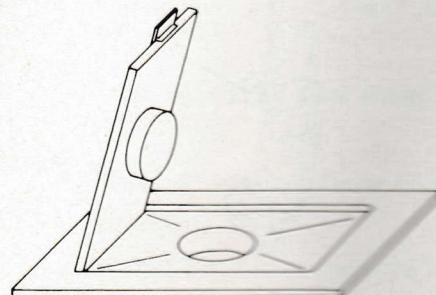
1. WALL VALVE ASSEMBLY

Furnished with "O" ring seal, 90° elbow, mounting brackets, screws and lead wires for low voltage connection.



2. FLOOR VALVE ASSEMBLY

Designed for installation directly in floor. Die cast construction with spring loaded cover. Provision is made for a low voltage switch attachment. Floor valves may be connected directly to the belled end of elbows or to rigid tubing by using a slip coupling.

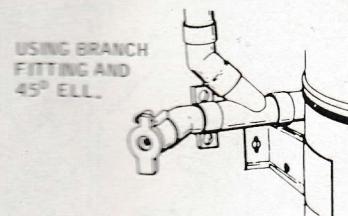


3. UTILITY VALVE ASSEMBLY

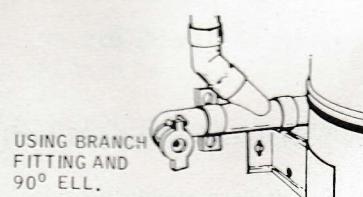
Constructed of plated steel tubing with spring loaded covers. Designed for surface application on posts, walls, etc; generally used in basements and garages. May be connected directly to belled end of elbows and branch fittings or to rigid tubing by using a slip coupling.



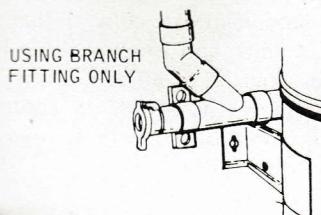
UTILITY VALVE



USING BRANCH
FITTING AND
45° ELL.



USING BRANCH
FITTING AND
90° ELL.

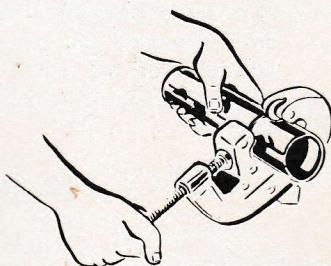


USING BRANCH
FITTING ONLY

B. TUBING

There are two types of tubing used in the installation of a built-in vacuum system.

1. RIGID TUBING



1-3/4" OD rigid tubing is furnished in 8 foot lengths. It is used for all straight runs in the transmission system. It can be easily cut to any desired length on the job with a tube cutter equipped with a cutting wheel for plastic.

Inside and outside edges should be clean, and the cut should be square to shoulder completely with the interior flange in slip couplings, belled ends of branch fittings, and elbows. A hacksaw may be used, but care should be taken to get a square cut by using a miter box or tube cutting vise, and the cut edge should be free of burrs.

2. FLEXIBLE TUBING



Flexible tubing is made of heavy-duty vinyl. Standard size is 2" OD by 1-3/4" ID by 9 inches.

It can be used for connections in the tubing system as an alternate method for rigid fittings, except for the 90° elbow in the wall valve. The use of flexible tubing is more convenient for installations in existing construction, as it lends itself to less precise measuring and cutting, and is more easily "fitted through" difficult installation areas.

The ID of the flexible tubing will snugly accept the OD of the rigid tubing. The rigid tubing should be inserted a minimum of 2" to assure a firm joint.

C. FITTINGS

Fittings are provided in a variety of designs to accommodate the connecting of the various components contained in the conveying system. By skillful use of the fittings, a wide variation of conditions can be handled.

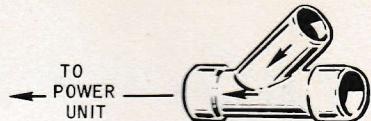
1. SLIP COUPLINGS



CROSS SECTIONAL VIEW

Slip couplings are made of rigid plastic. They are used for joining straight lengths of rigid tubing or for connecting the utility valve elbow to rigid tubing or to the branch opening of the branch fitting. Tubing insertion should be made full depth to form a solid butt joint with inner flange of coupling.

2. BRANCH FITTINGS



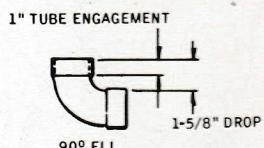
Branch fittings are made of rigid plastic with branch sections at a 45° angle to the straight leg. The OD is 1-3/4", except for ends of a straight leg, which are belled to form an ID to take 1-3/4" OD rigid tubing. They are designed to give unrestricted directional flow (branch leg always pointed with the direction of flow toward the power unit) and to connect branch valve lines to the trunk or main conveying line.

3. RIGID ELBOWS

May be used to provide the necessary turns in the tubing system with a minimum of flow restriction. Two types of elbows are available which have the capability to be used singly or in combination to provide any type of turn required to complete the system.

To use in combination, a nipple must be used to join components. A nipple can be made by cutting a 3" length of rigid tubing. Make sure it is properly deburred.

- a. 90° elbows have female flanges on both ends to accommodate the insertion of a mating component.



- b. 45° elbows have female flanges on both ends to accommodate the insertion of mating components.



45° ELL.

4. BUSHINGS

Used in applications such as a straight through a concrete wall connection, where it is not possible to secure the valve assembly using the metal mounting brackets. Complete instructions for use are packed with the part.



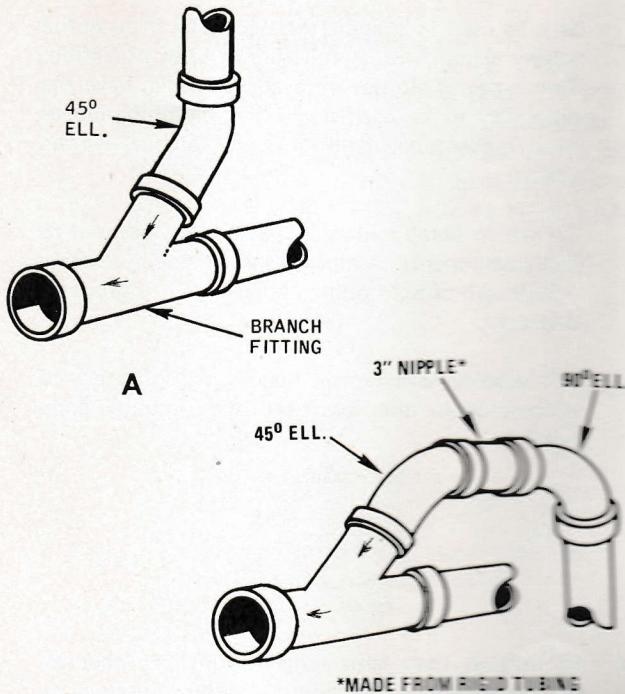
5. THRU-WALL ADAPTERS

Used in applications through a stud constructed wall. It is used with a conventional wall valve assembly, and is substituted for the 90° elbow in the assembly. Complete instructions for use are packed with the part.



Illustrated below are some examples of application for use of rigid fittings.

- For a 90° drop from an upper level valve to a horizontal transmission line below.
- For a 90° drop from an overhead transmission line to valve below.

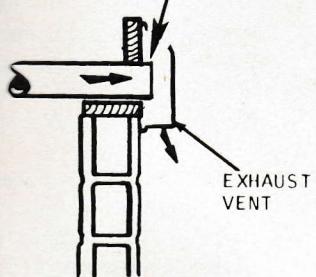
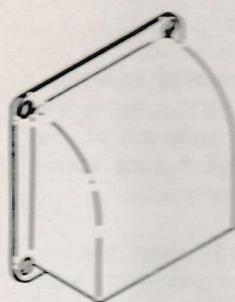


6. EXHAUST VENT

The exhaust vent assembly provides a neat finished appearance for the exhaust duct on the house exterior, and is acoustically treated for sound reduction.

It is important that the tubing extend 1/2" to 3/4" beyond the exterior wall for proper operation of the vent. Four holes in the vent flange allow it to be easily fastened to the house exterior.

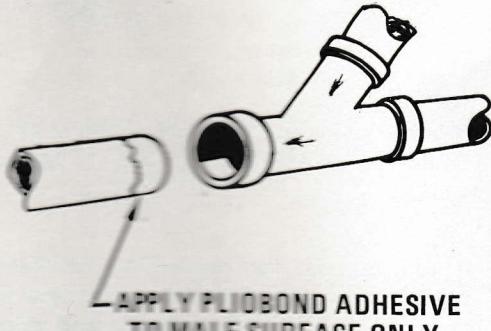
**TUBING TO EXTEND
1/2" TO 3/4" BEYOND
THE EXTERIOR
SURFACE WALL.**



D. SEALANTS

1. PLIOBOND

All joints and connections in the tubing system should be structurally firm (supported by hangers) and carefully sealed to prevent leaks. Pliobond is a liquid adhesive highly recommended for all permanent connections. It is easy and fast to apply and sets up and ages without becoming brittle. Pliobond is applied to male surfaces only, so that upon insertion, surplus adhesive will make a bead on the exterior only.



2. PVC CEMENT

This is a polyvinyl chloride solvent adhesive. Both surfaces must be coated, and the joint made immediately, as IT SEATS VERY QUICKLY AND RIGIDLY. Support with clamps or strapping for structural strength.

3. TAPE

Plastic tape is recommended as an optional method to seal all joints that will remain accessible in open areas, such as attics, basements, or crawl spaces. It is used to connect conveying lines to intake and exhaust tubes on the power unit, permitting easy disconnect for service or removal. If future extension or revision of the

system is anticipated, taped connections are preferable to permanent adhesive. Plastic tape is fast and easy to use, and if properly applied, seals the joint securely. In making the wrap, stretch slightly and press firmly to the surface, about half the width on each of the two surfaces being connected. Two complete wraps are recommended as a minimum.

SECTION V SUGGESTED TOOLS

An assortment of common tools such as hammer, screwdrivers, pliers, wrenches and chisels should be available. In addition to these common tools, some special tools are a necessity to do a neat and adequate job.

These special tools are as follows:

<u>DESCRIPTION</u>	<u>SOURCE (SEARS DEPT.)</u>
Retractable blade utility knife	*D/9
1-3/4" drill bit	Installation Tools and Equipment Catalog
2-1/8" drill bit	Installation Tools and Equipment Catalog
In-wall valve template and level	**D/20 - 4225
205SP special 2-1/2" plastic tubing cutter with cutter wheel	D/20 or Installation Tools and Equipment Catalog
SE176 special plastic tubing cutter wheel	D/20 or Installation Tools and Equipment Catalog
1/2" electric drill	D/9
Wire cutter — diagonal type	D/9
Sabre or keyhole saw (fine tooth)	D/9
1/2" x 90° drill chuck attachment	Installation Tools and Equipment Catalog
Up to 5' of drill extensions	Installation Tools and Equipment Catalog
Vacuum test gauge	Service Tool and Equipment Catalog SE1592
24 ft. string for layout, If cleaning hose is not available	D/9
1/4" ratchet wrench	D/9
10" half round rasp file	D/9
1/2" masonry drill	D/9
6' tape measure	D/9

* D/9 Hardware Dept.

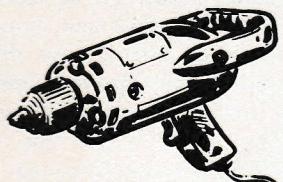
**D/20 Floor care Dept.



2-1/2" TUBING CUTTER WITH
CUTTING WHEEL FOR PLASTIC



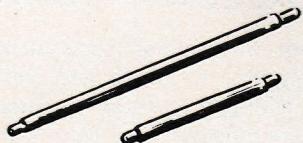
2-1/8" DRILL OR HOLE SAW



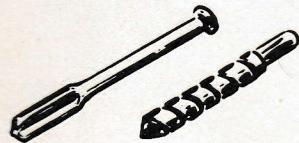
1/2"
ELECTRIC DRILL MOTOR



1/2" x 90°
DRILL CHUCK ATTACHMENT



UP TO 5' OF DRILL
EXTENSIONS BY 6" - 12" OR 18"



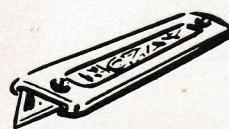
1/2" STAR OR
MASONRY DRILL



SABRE OR
KEYHOLE SAW
(FINE TOOTH)



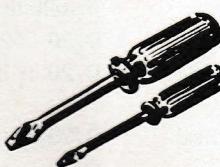
WIRE CUTTER (DIAGONAL TYPE)



UTILITY
RAZOR BLADE KNIFE



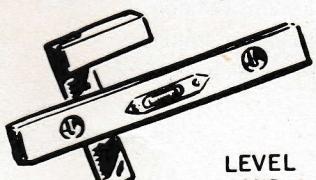
HAMMER



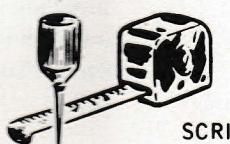
SCREWDRIVERS



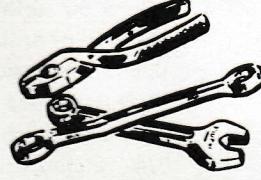
TUBING REAMER
OR 1/2" ROUND FILE



LEVEL
AND
SQUARE



SCRIBE
AND
STEEL TAPE
MEASURE



PLIERS AND WRENCHES



WALL VALVE OPENING TEMPLATE
AND LEVEL



VACUUM GAUGE 120 INCH RATING



CUTTING WHEEL FOR PLASTIC

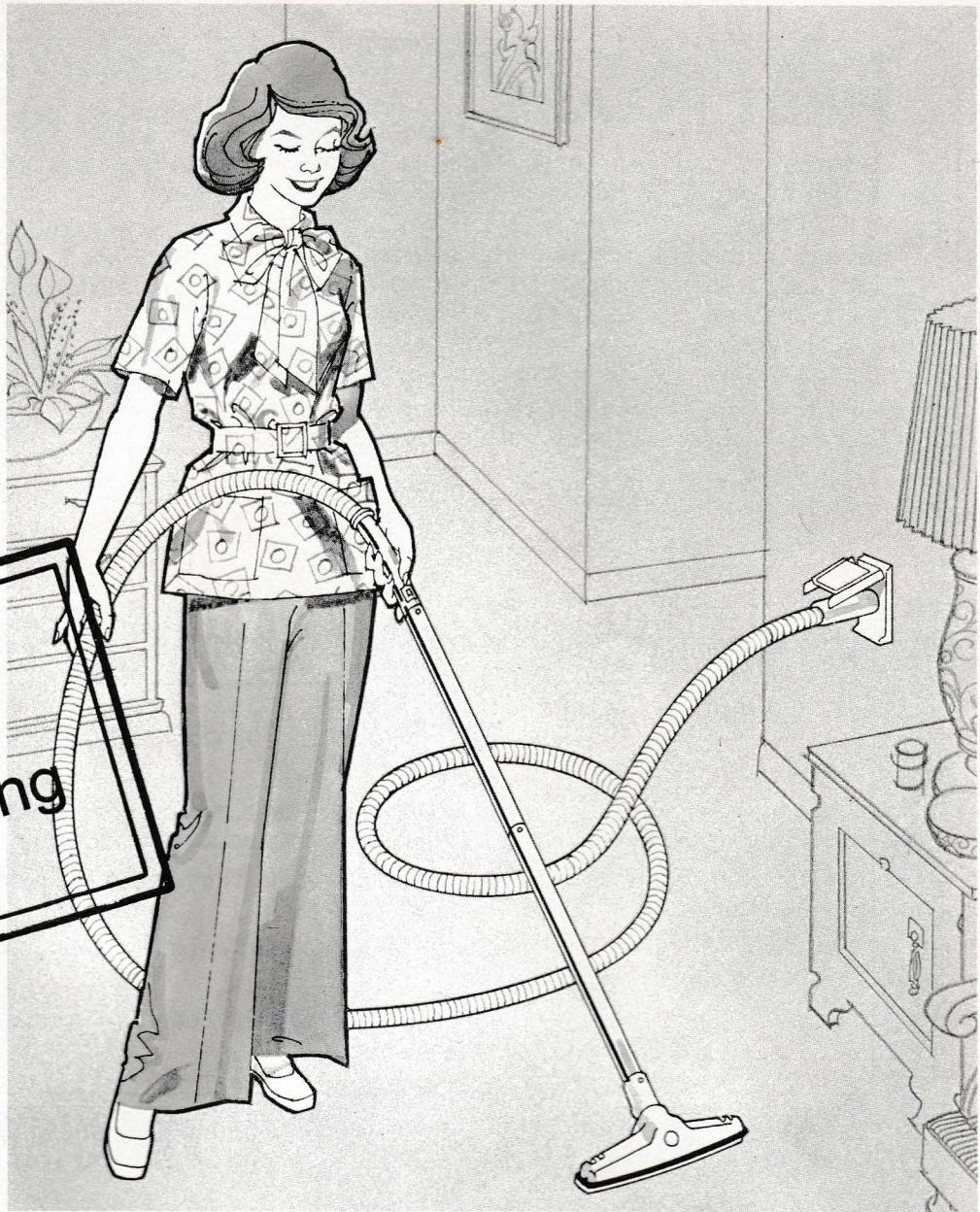
Kenmore owners manual

**PLEASE
REVIEW**
Before Operating
Cleaner

MODEL NOS.

116.4026
116.4027
116.4052
116.4053
116.4054

CAUTION:
Read rules for
safe operation
and instructions
carefully.



KENMORE BUILT-IN VACUUM CLEANING SYSTEM

- Assembly
- Operation
- Accessories
- Care

FIRST PLEASE

Before you use your new Kenmore Built-in Vacuum Cleaning System, please read this Owner's Manual.

Learn about your system's many features. Learn how easy it is to operate. Discover how it can make total home care quicker, easier and more pleasant for you and your family.

There are specialists at Sears available to advise you on the operation and care of your Kenmore Built-in, and to answer your questions about floor

care. Or, if you prefer, you may write the address below.

Be sure to include the complete MODEL NUMBER of your system when you write. The MODEL NUMBER is located on the Power Unit's identification panel.

Full One-Year Warranty

For one year from first day of use in your home, Sears will repair, free of charge, defects in material or workmanship which appear in this vacuum cleaner.

If warranty service is needed, simply contact the nearest Sears store or Service Center in the United States.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

SEARS, ROEBUCK AND CO. Sears Tower BSC 41-3 Chicago, IL 60684

IMPORTANT RULES FOR SAFE OPERATION

- Read this owner's manual thoroughly. Follow instructions.

Warning: Electric shock could occur if used outdoors or on wet surfaces.

- Never vacuum up liquids unless you use special "Aqua-Lift" attachment with the 4464 non electric hose.

- Never vacuum cleaning fluids, perfumes, shaving lotions, etc. These liquids (or their vapors) may cause fire or explosion.

- Pick up sharp, hard objects by hand.

- If you leave the cleaner, remove hose from wall inlet and close cover to turn off power unit.

- Cigarette butts, fireplace ashes, etc. should not be picked up with cleaner.

- A reset button is located on the top of the Kenmore Built-In Vacuum Cleaning System, to protect the electrical components of your system, just like an electrical fuse. If your Built-In Cleaning System does not operate when the switch is turned on, press the reset button in case an overload has opened the breaker.

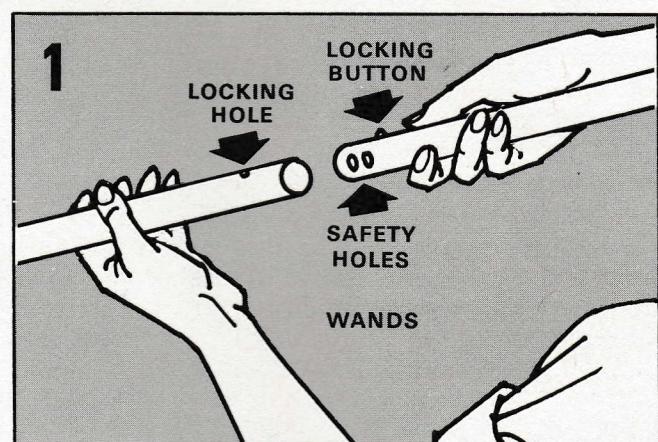
- When you have finished vacuuming, remove hose from wall inlet and store with tools in caddy.

- Pay special attention to the many other tips for your convenience on page 7.

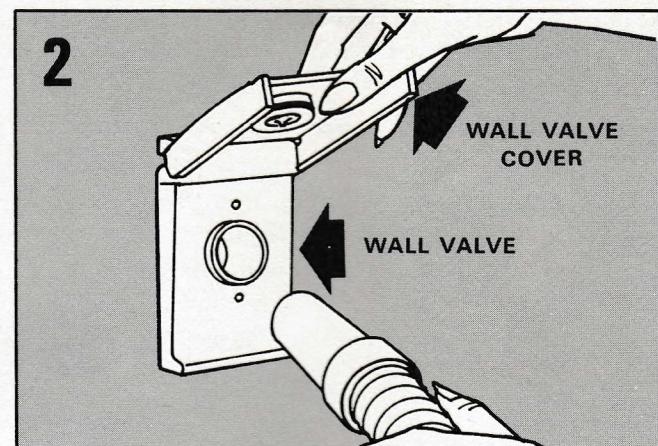
HOW TO START AND CLEAN WITH YOUR NEW BUILT-IN SYSTEM

1 Assemble two wands and attach desired cleaning tool. Push until locking button snaps into hole. Attach assembled wands to curved metal end of hose.

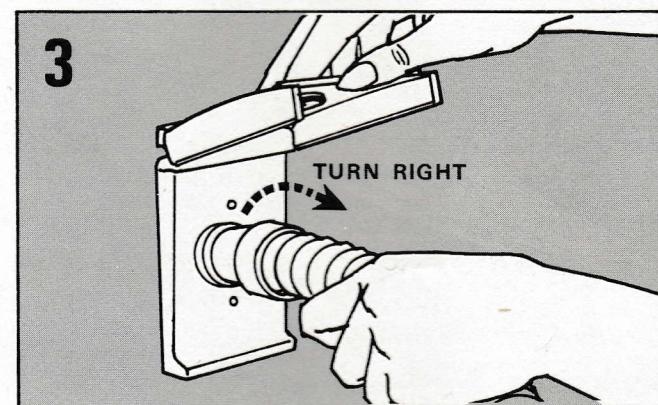
To prevent damage or injury due to powerful suction, wand and hose end have six openings on sides. When in use holes are covered by attachments, and you have full suction.



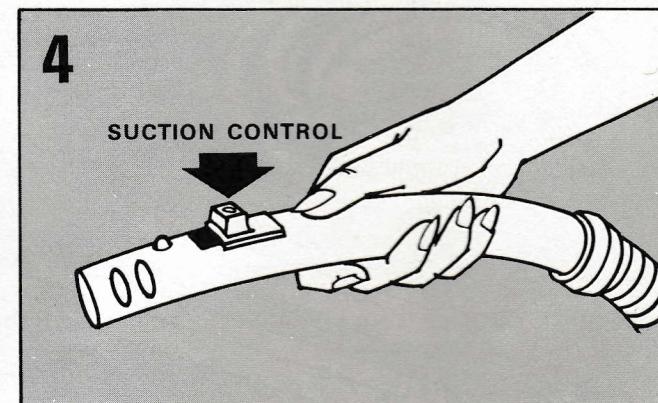
2 Lift cover of any convenient wall valve to turn on central power unit. All other valves should be closed. Cover has built-in switch that automatically turns power unit on and off through safe, low-voltage wiring.



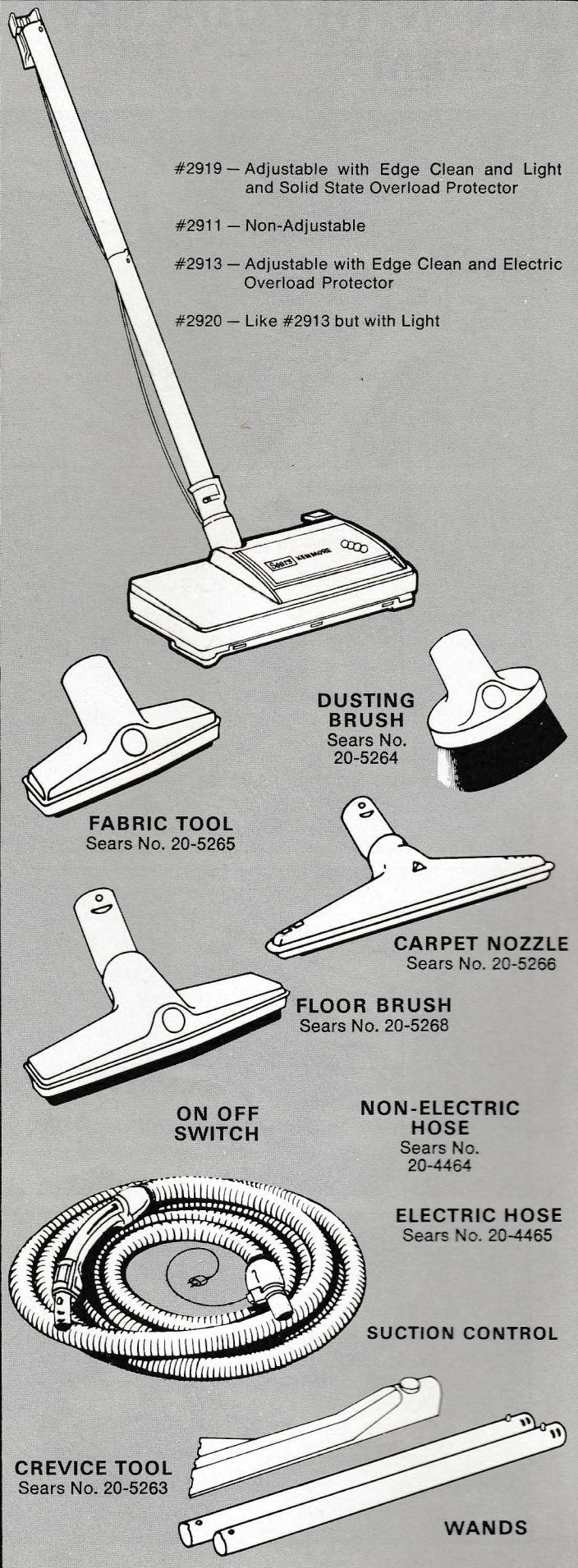
3 Plug in hose by firmly inserting the straight end. Friction lock with a slight twist to the right.



4 A slide suction control on curved handle of hose lets you adjust the amount of suction. For full suction the control should be closed. To reduce the amount of suction power for cleaning light weight fabrics, just open the suction control.



ATTACHMENTS



Attachments are available for carpets, bare floors, walls, ceilings, woodwork and furnishings.

Each attachment does many cleaning jobs. Use each as it suits you best.

FABRIC TOOL

The Fabric Tool is ideal for most home upholstered furnishings.

DUSTING BRUSH

Your Dusting Brush takes over much hand dusting. For best use press lightly.

CARPET NOZZLE

The Carpet Nozzle cleans rugs and carpets of all types. A floating brush adjusts to the type of carpet and pile. For better cleaning results use a Power-mate.

FLOOR BRUSH

Use the Floor Brush to clean smooth surfaces. May be used on walls. Wash Floor Brush in warm detergent water.

HOSE

On the curved-metal end of the hose is a suction control. For full power, close the control. For less suction, open control (when cleaning light weight fabrics).

CREVICE TOOL

Use Crevice Tool for hard-to-get-at places.

WANDS

Two wands give extra length to hose. Attach wands to hose. Slide cleaning tool onto end of wand.

RUG AND CARPET CARE

Most dirt in a room collects in the carpet. Therefore, complete cleaning of rugs and carpets helps keep your home furnishings clean. There are many types of carpet dirt:

SURFACE LITTER

— thread, hair, lint, and fabric scraps on top of the carpet pile.

DIRT AND DUST

— light soil in the upper part of the carpet pile. This dirt and dust causes fiber wear and dulls the carpet color.

SAND AND GRIT

— soil that sifts down to the base of the carpet pile.

For best carpet cleaning, guide the Carpet Nozzle over the carpet surface in a forward-backward motion. Make at least 2 or 3 strokes in both directions. Long, slow strokes are best. This raises the dirt to the surface and into the cleaner.

Shag carpet pile often becomes "flat" and the fluffed look is lost. This may be the result of the direction you vacuum. For better results, change direction.

Caution: Use a cloth to pick up chemicals, cleaning fluids, liquids, or flammable products. Do not use a vacuum cleaner.

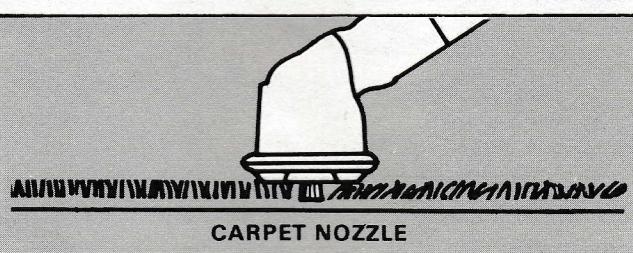
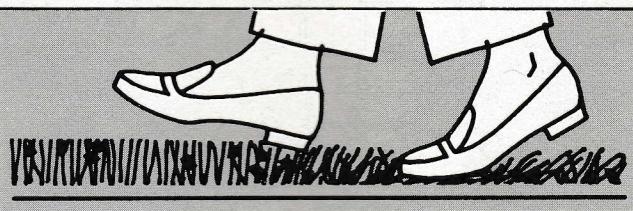
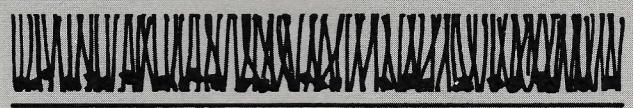
SURFACE LITTER



DIRT AND DUST



SAND AND GRIT

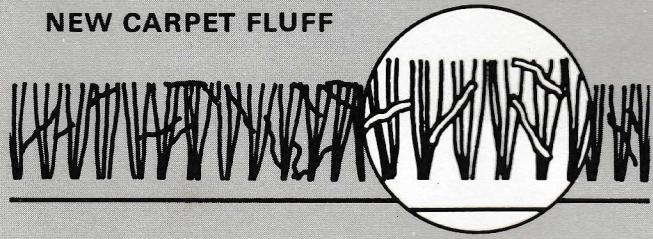


CARPET NOZZLE

HOW OFTEN SHOULD YOU VACUUM?

This depends on the type of soil, traffic in your home, and family size. "Regular" vacuuming may mean each day or once a week.

NEW CARPET FLUFF



NEW CARPETS

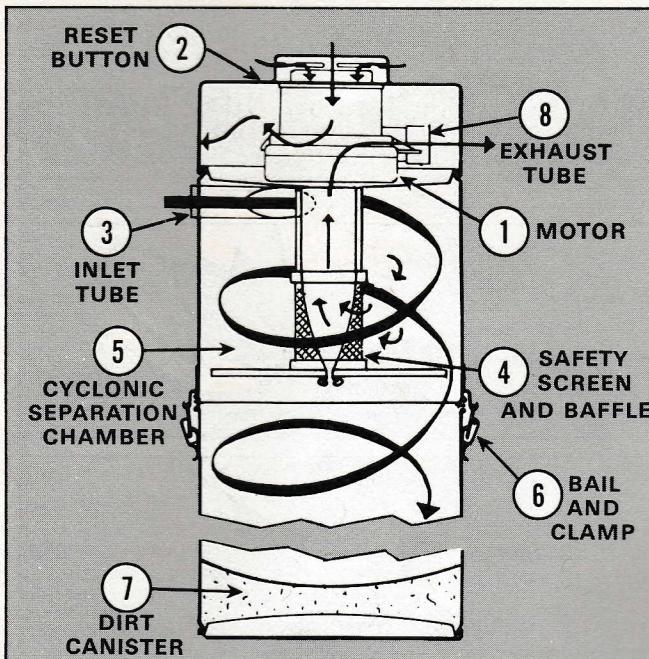
Fibers and fluff from new carpets are loose ends from cutting and shearing by the maker. They are like basting threads — meant to be removed.

New carpet should be vacuumed often. Shedding may go on for several months. The amount of fibers and fluff can be large and light in texture but do not be alarmed.

HOW YOUR BUILT-IN SYSTEM WORKS —AND HOW TO CARE FOR IT

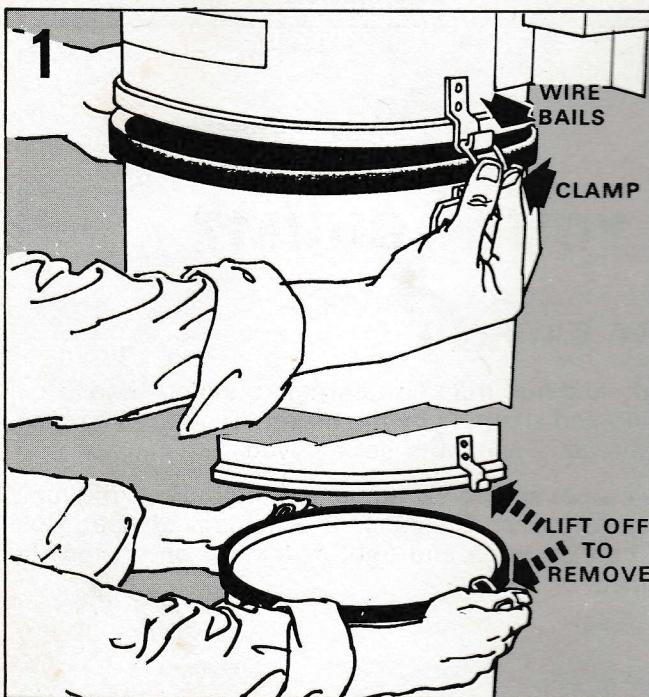
The Power Unit of your Kenmore Built-In Vacuum Cleaning System is mounted on the wall, in an out-of-the-way part of your home. The Kenmore Cyclonic Separation Design makes dust bags unnecessary, the air flow is never restricted by an accumulation of dirt, regardless of the amount collected. This makes it possible for the suction power to constantly work at maximum efficiency. It quietly provides suction

power that will reach throughout the house. When the unit is on, the powerful motor creates the suction that draws dust and dirt into the separator chamber through the inlet tube. The separated dirt drops into a large capacity canister that requires only periodic emptying. Exhaust is vented outside the house, so air cannot recirculate in the room, as it does with conventional cleaners.



THE POWER UNIT

- 1—Motor
- 2—Reset Button (Circuit Breaker)
- 3—Inlet Tube
- 4—Safety Screen and Baffle Removable and Washable
- 5—Cyclonic Separation Chamber
- 6—Bail and Clamp for Dirt Canister
- 7—Dirt Canister
- 8—Exhaust Tube.



EMPTYING THE DIRT CANISTER

Check the canister periodically. The type of dust and dirt collected will determine how often canister should be emptied.

- 1**: To remove the canister, open both clamps at the same time — leaving canister suspended by the wire bail. Grasp both clamps and lift canister off.

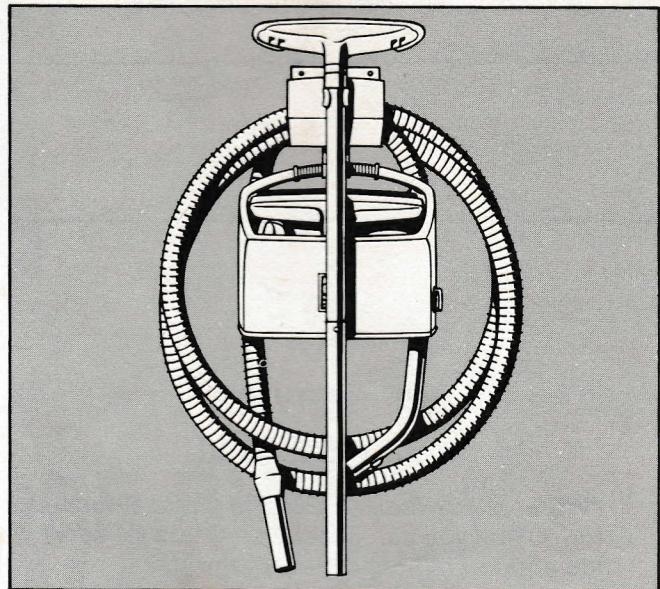
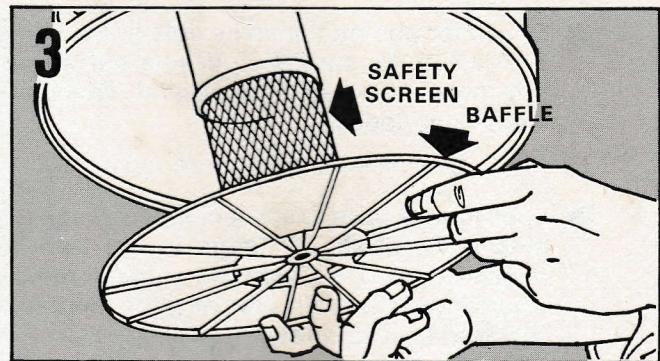
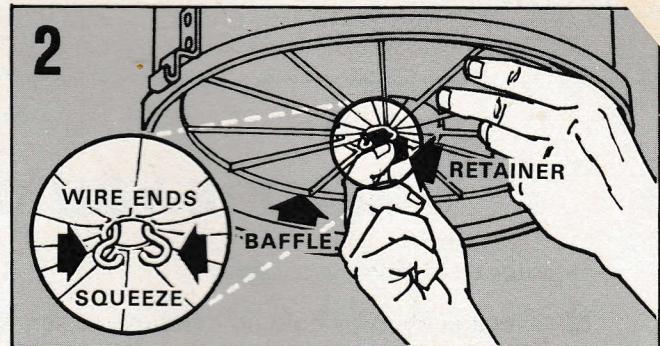
2 While the unit is opened, check the safety screen and baffle by first removing the small retainer in the center. Second, while holding the baffle with one hand, squeeze the wire ends together with the other hand.

3 Pull downward on baffle to remove. Tap it gently in the dirt canister or rinse off under a water faucet and dry it before replacing.

To replace, make sure both wire ends are started in the upper opening and slide baffle upward until the wire ends snap through the center hole. Make sure you replace the retainer firmly before replacing the dirt canister.

To replace the dirt canister, hang it on the latches from the two bail, then complete the latching action by pressing downward on both clamping levers at the same time. Be sure the gasket fits smoothly between the canister and the separation chamber. This insures a good suction seal and proper cyclonic separation with no loss of suction.

NOTE: Large pieces of paper such as napkins may get lodged in the separation chamber reducing the efficiency of the unit. Avoid picking up such items for maximum performance.



STORING HOSE & ATTACHMENTS

All the attachments you need for the most efficient cleaning are packed in a handy carrying case. Its compact design permits you to carry the tools to any room while you are cleaning, so the proper tool is always at hand.

The cleaning hose is easy to store on the bracket hanger that is furnished to mount on the wall of a closet or utility room. Hang the hose on the wall bracket provided.

TIPS FOR YOUR CONVENIENCE

BEFORE YOU VACUUM:

- Pick up sharp, hard objects by hand.
- Christmas tree needles may clog hose. They may be picked up, with care.
- Pick up napkins and other large pieces of paper that can reduce suction power.

WHEN YOU'VE FINISHED VACUUMING:

- Let system run for 30 seconds or so to clean dust and dirt from hose and lines.
- Store attachments in caddy when not in use.
- Check canister occasionally (about every 2 to 3 months in normal use) to see if it needs emptying.
- Clean attachments for best appearance and working efficiency.
- Sealed motor needs no oil or grease.

BEFORE YOU CALL FOR SERVICE

If motor runs, but low suction:

- Check suction by holding hand over open wall valve.
- Check for obstruction in flexible hose. Remove obstruction by carefully pushing out with garden hose (no water necessary). Also check wands and tools.
- Make sure all wall covers are closed.
- Look in wall valve to see if clogged. If some foreign material should lodge in the wall inlet, remove the two inlet screws and pull the plate away from the wall. Remove the matter and replace the inlet plate.
- Check for leaks in vacuum tubing.

If motor does not run:

- Push reset button on Power Unit.
- Make sure Power Unit is plugged into power supply.
- Check fuse box or circuit breakers.
- Check low-voltage wire connections and switches.

WE SERVICE WHAT WE SELL

"We Service What We Sell" is our assurance to you that you can depend on Sears for service and Sears service is nationwide.

Your Sears Vacuum Cleaner has added value when you consider that Sears has service units nationwide staffed with Sears trained Technicians . . . professional Technicians specifically trained on Sears appliances, having the parts, tools and equipment to insure that we meet our pledge to you . . . "We Service What We Sell".

Sears Customer Service



Sears

SEARS, ROEBUCK AND CO., U.S.A.